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2013	Beijing, China
2009	Marrakesh, Morocco
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2001	Skiathos, Greece
1997	Netanya, Israel
1993	Lisbon, Portugal
1989	Singapore
1985	Copenhagen, Denmark
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1977	Prague, Czechoslovakia
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2017	Dieter Hackfort Keith Henschen
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2013	Guido Schilling
2009	Yannis Zervas
2001	Dieter Hackfort Terry Orlick
1997	Glyn Roberts Gershon Tenenbaum
1993	Atsushi Fujita John Salmela
1989	Filip Genov Dorothy Harris Paul Kunath Robert Singer Harold Thomas Anthony Whiting

Developing Scholar Award

2021	Garry Kuan Noora Ronkainen
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2013	Yu-Kai Chang Kristoffer Henriksen
2009	Tatiana Ryba
2005	Hulya Asci Sian Beilock
2001	Andrew M. Williams
1997	Britton Brewer Judy van Raalte

Developing Practitioner Award

2021	Soek Hau
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2020	Jean Cote
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2019 Likang Chi
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2018 Tsung-Min Hung
Athanasios G. Papaioannou
Judy L. Van Raalte
Gangyan Si
Natalia Stambulova

2017 Dieter Hackfort
Keith Henschen
Sidonio Serpa
Robert Singer
Gershon Tenenbaum

Keynotes

Mobile brain-body imaging in sport, exercise and performance psychology

Maurizio Bertollo

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ABSTRACT

Identifying the psychophysiological and behavioral states associated with optimal performance is crucial to understand the features of sport excellence (di Fronso et al. 2017; 2020). To this purpose, psychophysiological monitoring, technology, and particularly brain equipment, plays an increasingly important role (Bertollo et al., in press). Psychophysiological monitoring in sport has a long tradition in lab settings. However, recent investigations in the applied field of sport, exercise, and performance have improved our knowledge of the mind-body dynamics during actual performance. Moreover, the adoption of ecological tasks and the use of advanced brain-body technologies in practice have helped to elucidate the underlying cognitive and brain processes (e.g., attention, self-regulation, neural efficiency) involved in performance execution (Bertollo et al. 2020). For this reason, Mobile Brain-Body Imaging in sport exercise and performance psychology is currently very important. Nowadays, when adopting a psychophysiological perspective, objective physiological measures (e.g., autonomic, cortical, somatic) can be recorded using dry electrodes and lightweight wireless amplifiers during sport performance. Consequently, modern psychophysiology has been used to conduct rigorous ecological research aimed at capturing the complex processes underpinning behavior in sport, exercise, and performance settings. However, the usage of brain/body technologies in practice, and its combined application with other technologies, needs careful attention. In this presentation I discuss the multimodal and multidimensional framework of intervention in sport psychophysiology and neuroscience, the psychophysiological and neural processes involved in sport performance, as well as the use of these technologies during performance and the implementation of ecologically valid protocols. Moreover, I introduce the main technical and methodological issues related to the adoption of these technologies in practice (Bertollo et al., 2020). The presentation concludes with ethical considerations and remarks on the use of brain-body technologies in sport and exercise sciences and elucidates how to integrate this technology in psychological skills training.

KEYWORDS

Psychophysiology;
Biofeedback; Neurofeedback;
Optimal Performance; Sport
Neuroscience

A clinical profiles approach to sport-related concussion: psychological considerations

Anthony P. Kontos

University of Pittsburgh

ABSTRACT

Sport-related concussions are a major health concern affecting millions of athletes annually in the U.S. (Bryan et al., 2016) and countless others worldwide. All ages and levels of sport are affected by this injury from youth sports to professionals. Concussions are a heterogeneous injury involving different clinical profiles or subtypes. Among the common concussion clinical profiles are anxiety/mood, cognitive, headache/migraine, ocular, and vestibular (Collins et al., 2014; Kontos & Collins, 2018). These clinical profiles may overlap and some profiles are more likely to co-occur, such as anxiety/mood and vestibular or migraine/headache and vestibular (Kontos et al., 2019). Concussion profiles/subtypes are influenced by several key risk factors including migraine history (Suffrunko et al., 2017), motion sensitivity (Suffrunko et al., 2018), and psychological history (Gillie et al., 2020). Other factors such as continuing to play following a concussion can also adversely affect recovery time and symptoms (Elbin et al., 2016). Recently, researchers have highlighted the association of early care-seeking (within the first 7 days) following a concussion to reduced recovery time (Kontos et al., 2020). There is also growing evidence for a dose-response relationship between the number of risk factors and the length of recovery following concussion (Kontos et al., 2019). Following a concussion, athletes may experience psychological issues including anxiety, depressed mood, social isolation, and fear of re-injury (Sandel et al., 2017). In fact, approximately 30% of athletes report one or more psychological symptoms (e.g., anxiety, mood, irritability, emotional) following a concussion (Kontos & Collins, 2018). Other factors such as resilience (Ernst et al., 2021), physical activity (Trbovich et al., 2021), and sleep quality (Trbovich et al., 2021) are associated with a decrease in psychological issues following concussion, as well as accelerated recovery time. Researchers and clinicians alike have recently begun to pay more attention to these psychological considerations in athletes following a concussion. The best approach for concussion clinical care involves precision, active treatments that target specific concussion clinical profiles (Collins et al., 2016). For example, an athlete with vestibular issues such as imbalance and visual motion sensitivity would be prescribed vestibular rehabilitation to address these issues. This approach is predicated on a strong behavioral management foundation for all concussed athletes that includes physical activity, nutrition, hydration, sleep, and stress management interventions (Kontos & Collins, 2018). Additional targeted interventions for psychological issues may also be warranted and might include psychoeducational, cognitive behavioral therapy (CBT), mindfulness, among other interventions. The sport psychology professional is in a unique position to assist the concussion care team and athletes across multiple areas including: 1) Awareness- both pre- and post-injury; 2) Assessment- identifying mental

KEYWORDS

athlete; clinical profiles; concussion

health issues such as anxiety, mood, and suicide risk; 3) Assistance-promoting coping, social support, and CBT and related interventions; and 4) Action- referrals when appropriate and follow-up monitoring of athletes after physiological recovery.

Whose body matters? implications for sport psychology

Vikki Krane

Bowling Green State University, Ohio, USA

ABSTRACT

In this presentation, I critique the World Athletics policy aimed at female middle-distance runners with high endogenous testosterone with an eye towards the sport psychology and mental health implications of it. Conceptually framed by feminist cultural studies, transfeminism, and intersectionality, I question whose bodies matter in elite women's sport. World Athletics mandates that hyperandrogenic athletes must undergo medical intervention or be excluded from women's events in distances between 400m and the mile. The policy is aimed at female athletes with certain intersex variations. The justification for the policy is more consistent with cultural narratives about testosterone than the scientific evidence (e.g., Karkazis & Jordan-Young, 2018; Krane & Panunti, 2019). Culturally, testosterone is associated with maleness and consequently high testosterone is presumed to infer high athletic ability. When females have high testosterone, it is construed as an unfair advantage by supporters of this policy (no such policy is aimed at male athletes). The scholarly research, however, does not support this conclusion and is equivocal (Jordan-Young & Karkazis, 2019). Applying an intersectional lens to this analysis reveals the clandestine impact of cultural expectations based on Western, White, heteronormative, femininity in elite sport (Krane, Calow, & Panunti, forthcoming). The implementation of this policy disproportionately targets Black women from the Global South. Athletes impacted by this policy have experienced mental health challenges, unnecessary medical treatments, social disparagement, public humiliation, loss of income, and more. While organizations such as the World Medical Association have publicly condemned the regulations, sport psychology has been largely silent. As a field, we should be concerned about the mental and physical health implications of this policy as well as the discriminatory application and consequent unethical actions. We can be vocal in support of targeted athletes and can take an anti-ism stance (Cooper et al., 2019) in which we actively condemn a discriminatory and unhealthy policy. Sport psychology also provides an avenue for education to reduce bias against athletes based on their appearance and to reinforce evidence-based policy grounded in ethical research.

KEYWORDS

hyperandrogenism; intersex variations; testosterone; World Athletics

Fostering self-determined motivation in physical activity

Nikos Ntoumanis

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ABSTRACT

My talk has three aims. The first is to explain the role of contextual and personal factors in promoting or undermining self-determined motivation for physical activity, weight management, and psychological well-being. In doing so, I will present examples from three field intervention projects that were carried out at the Physical Activity and Well-Being Research Group at Curtin University in the last 5 years. The first project aimed to develop and test the effectiveness of an interpersonal communication program for fitness instructors so that they can foster self-determined motivation in their exercisers. I will explain how the program was set up, its theoretical foundations, and its effects on various instructor and exerciser outcomes. The second project will outline the feasibility and efficacy of a peer-led motivationally-embellished workplace intervention on physical activity, sitting time, and cardiometabolic risk factors amongst inactive employees. The third project will describe an intervention program developed within the premises of professional Australian football clubs, aiming to reduce weight, improve physical activity and diet, and improve psychological well-being amongst male overweight and obese fans. The second aim of my talk is to review the effectiveness of self-determination theory informed interventions in the health domain. In doing so, I will present the results of a recent meta-analysis (Ntoumanis et al., in press) on this topic. The last aim of my talk is to identify challenges in implementing SDT interventions and potential solutions.

KEYWORDS

autonomous motivation; need support; weight loss; peer support; health behavior change

The light in dark spaces: athletes surviving childhood trauma on their own terms

William D. Parham

Loyola Marymount University, Los Angeles, California; National Basketball Players Association, New York

ABSTRACT

Hidden behind the celebrity and glamour and athletic performances that sometimes defy the laws of human nature lie untold secrets of indelibly etched trauma, fear, self-doubt, and existential questions about life's unfairness and uncertainty. Dark shadows of painful pasts that sometimes carry over into athletes' current challenges, present ever-present, added, and emotionally exhausting burdens that athletes' have been incentivized to keep secret. It has been said that where shadows have been cast it must be light nearby because shadows cannot be cast without light. Many athletes, despite life's weighty trials and tribulations,

KEYWORDS

Trauma; Mental Health; Athletes; Post-Traumatic Growth

discover ways to excel in their sports, distinguish themselves amongst their peers, bring recognition to family, friends, and communities from which they hail and cement their legacies as athletes who performed the best of which they were capable. They tap into a source of 'light' or strength that allows them to navigate themselves successfully. Had athletes been provided with places and spaces to talk about their adverse childhood experiences and shown ways to begin their respective journeys to emotional healing, audiences would have witnessed the expression of even more phenomenal individual talents, team performances, across team competitions, and increased excitement amongst fans evidenced in increased ticket sales and purchases of fan memorabilia. Reconciling intra-personal disequilibrium while maintaining across-time high-caliber athletic performance is evidence of brilliance and splendor yet untapped. This presentation will explore the price of the ticket for pursuing excellence in the face of life-changing adversity. The social construction of stigma, one of several barriers which impede athletes seeking help, will also be examined.

Ripple effects: interpersonal and social aspects of stress, coping, and emotions in sport

Katherine Tamminen

University of Toronto, Faculty of Kinesiology and Physical Education

ABSTRACT

The field of sport psychology has benefitted from a robust history of research examining athletes' stressor appraisals, coping, emotions, and emotion regulation, which has led to advances in applied practice for improving athletes' performance and wellbeing in sport. This presentation will begin by providing an overview of some theories and models of coping and emotion regulation that have underpinned much of the existing research and practice in this area. The presentation will then consider some criticisms that have been raised about these theories and models, namely that they have tended to focus on individualistic or idiographic aspects of appraisals, emotions, coping, and emotion regulation, while neglecting the social and interpersonal aspects of these affective processes. Situated within this background, the presentation will review qualitative and quantitative studies that have examined the experience of emotions as interpersonal or social phenomena, as well as the interpersonal regulation of emotions among athletes. The studies reviewed in this presentation describe the ways that emotions are experienced as social phenomena (e.g., group-based and collective emotions) and the social functions of emotions in teams and groups (e.g., impacts of emotions on team functioning and performance, affiliative functions of emotions, and the communication of values). Research on interpersonal emotion regulation among athletes will also be reviewed, detailing the interrelated nature of emotional self-regulation and interpersonal emotion regulation,

KEYWORDS

emotion; emotion regulation; coping; interpersonal; qualitative; quantitative

and the impact of interpersonal emotional regulation on athletes' sport enjoyment, commitment, and performance outcomes. This presentation also reviews studies that have examined the strategies that coaches use to regulate athletes' emotions, and the ways that coaches' interpersonal emotion regulation is associated with instrumental beliefs about the utility of emotions in sport. The presentation will consider future directions for research on the interpersonal and social aspects of affective phenomena in sport, including the use of different quantitative and qualitative methodological approaches that would enable researchers to broaden our understanding of emotions in sport contexts. Suggestions for applied sport psychology research and practice will be discussed, including ways that social emotional experiences could be leveraged to promote positive outcomes for athletes, and the maximization of interventions through 'spillover' or 'ripple effects' in teams or groups of athletes. Given the accumulating evidence in this area of research, the integration of individual and interpersonal perspectives is proposed for advancing research on emotions and affective phenomena in the field of sport psychology.

A lot to talk about: the past, present, and future of self-talk theory, research, and practice

Judy L. Van Raalte

Springfield College and Wuhan Sports University

ABSTRACT

Early research in self-talk and sport involved observational studies of athletes and their self-talk and empirical research exploring the effects of self-talk on performance. In 2011, a meta-analysis of instructional and motivational self-talk research and a systematic review of the self-talk literature described what had been learned with regard to self-talk and highlighted the need for additional theorizing. Initially, theories were linear, primarily focusing on the effects of self-talk and minimally noting the cyclical and ongoing nature of sport. For example, little attention was paid to the sequelae of performance and the ways in which performance and other factors might also affect self-talk. More recently, the sport-specific model of self-talk has addressed the bi-directional nature of self-talk and performance and expanded theorizing to include: (a) System 1 self-talk, the self-talk that reflects gut feelings and impressions and requires little cognitive effort; (b) System 2 self-talk, which athletes intentionally use, researchers assign in experimental studies, and depletes cognitive resources; (c) personal factors, such as an individual's personality characteristics; (d) contextual factors, such as culture, sport being played, and the training or competition environment; and (e) behavior, including sport performance. Such theorizing has directed attention to new areas of self-talk research such as dialogical processes (internal conversations), inner hearing, personality characteristics, and contextual factors related to

KEYWORDS

inner speech; dual process; measurement; application

particular sports. Advances in self-talk research have been hampered, however, by reliance upon self-talk assessment tools of questionable validity. Assessment methods and tools borrowed from other fields such as Linguistic Inquiry and Word Count (LIWC), Descriptive Experience Sampling, and neuroprosthetics for decoding speech may provide the foundation for further advances in self-talk research. Theoretical and empirical work conducted with valid and reliable measures provides the groundwork for effective self-talk interventions that are tailored to the individual needs of athletes in various contexts and can serve the needs of the athletes and coaches with whom we work.

Partnership Symposia

Cognitive fitness in the post COVID-19 world of high performance

Jeffrey Bond

College of Sport & Exercise Psychologists, Australian Psychological Society

ABSTRACT

Introduction: The COVID-19 pandemic has been a period of significant disruption to the international high performance sport system. The disruptions have included impacts on the Tokyo Olympic Games. **Purpose:** The Cognitive Fitness Framework (CF2) is being applied across many performance domains to inform programming in the recovery and training of high performance specialists. This symposium presents current information about the development and evolution of the CF2, and also presents 2 distinct applications of the CF2 to high demand environments. **Methods:** The CF2 has informed work being conducted by the College of Sport & Exercise Psychologists of the Australian Psychological Society in the development and evaluation of a mobile app for the support of athletes affected by the COVID19 disruption. The app guides daily cognitive training drills. This work will inform the development of the "Cognitive Gym" concept by the Defence Science & Technology Group. The CF2 has also informed work being done in Corporate Australia. CF2 has informed both performance related training programs and wellbeing support programs. **Results:** The rapid evolution and adoption of the CF2 across a diverse range of performance domains informs strategic thinking about program development. When considered in conjunction with the recent benchmark review of athlete wellbeing support programming published by the International Olympic Committee, a picture of "best practice" in the application of psychological principles to high performance, high demand situations begins to emerge. A review of CF2 applications in the high performance sport environment and the high demand corporate sector further reveals the value of the systems and structures recommended by the CF2 to such operating environments. **Conclusion:** Applications of the

KEYWORDS

Cognitive Fitness; Research; Applications; High Performance; High Demand

Cognitive Fitness Framework are informing strategic review and change programs across a wide range of performance domains. This symposium presents contemporary research and development ideas relating to the application of CF2.

Cognitive fitness and high-performance cognition

Eugene Aidman

Defence Science and Technology Group

ABSTRACT

Background: What it takes to sustain performance under pressure is remarkably common across many occupations, from firefighters and emergency medicine, to sport, performing arts and the military. The Cognitive Fitness Framework (CF2) was developed to assemble the key drivers of cognitive performance across these multiple domains. These drivers include primary cognitive capacities such as self-awareness, memory updating, inhibition control, and cognitive flexibility that can be linked to neuroscience-informed assessment and interventions. These cognitive primaries support the development of all skills, from reading, remembering and problem solving to job-specific technical skills, as well as more complex fitness attributes such as frustration tolerance and resistance to distraction. Similar to physical power and endurance, cognitive fitness can be improved with deliberate practice (Zaichkowsky & Peterson, 2018). **Method:** The presentation will examine design principles for the development of systematic cognitive practice routines, and compare existing examples being developed under the construct of Cognitive Fitness Gym. **Results and Discussion:** By integrating the concepts of mental fitness (Seligman, 2008), cognitive readiness (Grier, 2012; Cramer et al., 2019) and the growing consensus on key domains of cognitive functioning (Morris & Cuthbert, 2012; Yücel et al., 2019), the CF2 enables neuroscience evidence to inform a wide range of high performance applications relevant to the career development, lifestyle support and well-being of performance specialists across those domains. **References:** Aidman, E. (2020). Cognitive Fitness Framework: Towards Assessing, Training and Augmenting Individual-Difference Factors Underpinning High-Performance Cognition. *Frontiers in Human Neuroscience* 13, 466; Bond, J., Crampton, J., Winter, G., Gordon, A., Moyle, G., Stewart, D., & Aidman, E. Translating Cognitive Fitness Framework for Dual-use Application: A Performance-Focused Intervention for Athletes Affected by COVID-19 Disruption. Paper presented at Defence Human Sciences Symposium, Adelaide, South Australia, December 2020; Cramer, L., Hettiarachchi, I., and Hanoun, S. (2019). A review of individual operational cognitive readiness: theory development and future directions. *Hum. Factors* doi: 10.1177/0018720819868409; Grier, R. A. (2012). Military cognitive readiness at the operational and strategic level: a theoretical model for measurement development. *J. Cogn. Eng. Decis. Mak.*

KEYWORDS

Cognitive Fitness; High Performance Cognition; Cognitive Gym; Cognitive Training

6, 358-392. doi: 10.1177/1555343412444606; Morris, S. E., and Cuthbert, B. N. (2012). Research domain criteria: cognitive systems, neural circuits and dimensions of behavior. *Dialogues Clin. Neurosci.* 14, 29-37; Zaichkowsky, L., and Peterson, D. (2018). *The Playmaker's Advantage: How to Raise Your Mental Game to the Next Level.* New York, NY: Simon and Schuster.

Performance-Focused cognitive fitness intervention for athletes affected by COVID-19

John Crampton^a, Jeffrey Bond^a, Tony Morris^a, Leonard Zaichkowsky^b and Eugene Aidman^c

^aCollege of Sport & Exercise Psychologists, Australian Psychological Society; ^bBoston University; ^cDefence Science & Technology

ABSTRACT

Background: The Cognitive Fitness Framework (CF2) was developed to assemble the key drivers of cognitive performance under pressure across many occupations, from firefighters and emergency medicine, to sport, performing arts and the military. These drivers include primary cognitive capacities such as self-awareness, memory updating, inhibition control, and cognitive flexibility that can be linked to neuroscience-informed assessment and interventions. Similar to physical power and endurance, cognitive fitness can be improved with deliberate practice (Zaichkowsky & Peterson, 2018). This paper reports on the development of a prototype cognitive fitness program for competitive athletes, focused on fundamental mental capacities and subtending skills for re-setting and adjusting training rhythms and improving mental readiness for competition. **Method:** College of Sport & Exercise Psychologists (CoSEP) of the Australian Psychological Society (APS) are developing a CF2-informed paradigm in the management of the Mental Health - Performer Wellbeing - Performance Support operating environment. The CoSEP practitioner-led project is developing a modular program for a smartphone app-enhanced implementation. Its key building blocks are training protocols (drills) connected by a periodised training plan under the Cognitive Gym construct. A gamified battery of cognitive measures is used for pre and post assessment. **Results:** The current prototype contains a standard daily practice routine comprised of 10 drills taken from research modules covering Composure, Performance Mindset, Self-Belief, Recovery, and Mission-Ready. Its core recommended sequence of 3 weeks of daily interaction with the app (approx 45 minutes/day) includes practice drills, instructional material, assessments and interactive communication systems to facilitate engagement. Efficacy of the standard practice routine is assessed against the battery of cognitive measures. **Discussion:** Results will be discussed in the light of subjective assessments by athletes and coaches. The findings will inform the further development of the app, with

KEYWORDS

Cognitive Fitness; COVID-19; App; Cognitive Primaries; Standard Practice Routine

expansion concepts discussed. Validating the effects of the app and daily practice routine in demanding performance conditions seems worth pursuing in future research. Our practitioner-driven implementation of a CF2-informed Cognitive Gym training intervention is one of several lines of research and development effort stemming from the CF2 and currently underway in Australia. They hold considerable promise to generate disruptive change in how competitive athletes and other performance-focused professionals (from nurses and paramedics to first responders and the military) prepare for their occupational challenges.

Physical and cognitive fitness training in the workplace: validating a multimodal intervention in Australian corporate settings

Paul Taylor

College of Sport & Exercise Psychologists, Australian Psychological Society

ABSTRACT

Background: Cognitive Fitness Framework (CF2) suggests interventions targeting fitness fundamentals are likely to benefit both the performance and wellbeing of the workforce. Resilient Mind Program (RMP) is an intervention aimed at developing cognitive fitness through a blended methodology, with 3 hours of face to face delivery augmented with a 4-week program via mobile app. RMP draws on mindfulness, cognitive reframing techniques, and physical 'rituals' involving exercise and hydrotherapy. It is designed to help participants form healthy habits through personal effort and social interaction and includes a range of resources; workouts, guided breathing, recipes, educational videos and a 'Ritual Board' to track progress. It includes a social feed and leader board for the gamification of behaviour change. **Method:** 837 members of a range of businesses (Australian corporate sector) completed the 4-week RMP. Self-reported resilience and mental wellbeing were measured at baseline and post 4 weeks of the intervention with Brief Resilience Scale (BRS) and World Health Organisation's WHO-5 Well-Being Index. A subgroup of 110 participants also completed the Malash Burnout Inventory-General survey (MBI-GS, including Emotional Exhaustion, Cynicism and Professional Efficacy subscales). A separate group of Navy personnel also completed the 4-week intervention. **Results:** Main outcomes were improvements in mental wellbeing, resilience and, in the subgroup, burnout scores. In particular; the number of participants scoring high on the WHO-5 measure more than tripled over the 4 weeks (from 15% to 54%), the proportion of those WHO-5 categorised as likely low mental wellbeing declined from 28% to 8% and likely mental health issue incidence declined from 12% to 2%; 23% of participants reported high resilience post-training - more than double compared to 11% at baseline,

KEYWORDS

Cognitive Fitness; Corporate;
Mobile App; Well-Being;
Gamification

and those reporting low resilience reduced from 21% to 9%; In the subgroup reporting on their burnout, the intervention reduced the proportion reporting high Emotional Exhaustion from 55% to 31% and increased the proportion reporting low levels of exhaustion from 15% to 35%. The proportion reporting low workplace Cynicism increased from 22% to 33% and high Professional Efficacy increased from 43% to 55%; In the military personnel, there were statistically significant improvements in mental wellbeing ($p < 0.01$), resilience ($p < 0.01$) and burnout subscales (EE, $p < 0.01$; CY, $p < 0.01$; PE, $P < 0.02$) Discussion: Results show the RMP intervention to be effective in improving self-reported well-being and resilience in a corporate workforce, including banking, insurance and government sectors. Results also suggest that it is effective in reducing burnout symptoms.

Current status and future directions for elite athlete mental health research in Canada

Zoe Poucher

University of Toronto

ABSTRACT

Existing research in the field indicates that elite athletes are as likely, or in some cases, more likely to experience a mental disorder when compared to their non-athlete peers (Gorczyński et al., 2017). It has been suggested that sport-related stressors may place elite athletes at an increased risk of experiencing a mental disorder (Gulliver et al., 2015). Despite the increase in research being conducted on this topic, there is still much to learn about the prevalence and causes of poor mental health among elite Canadian athletes, and about ways to effectively support those who are struggling with their mental health. The purpose of this presentation is to review the current status of elite athletes' mental health in Canada, discuss current issues in research and applied/clinical practice, and highlight future directions for research in this area. Findings from a longitudinal study of mental disorders among elite Canadian athletes will be discussed (Poucher et al., under review). The results indicated that during the first year of the pandemic, between 37 and 41% of the athletes met the criteria for one or more mental disorders, and more women met the criteria for disordered eating than men at each time point. Additionally, there was little change in the levels of each disorder across time, symptoms of each disorder were significantly correlated, and perceived stress was a positive predictor of all three disorders. These results will be discussed in light of a recent scoping review of existing athlete mental health research, including studies focused on disorder prevalence, support seeking, and mental toughness. Key issues from the symposium presentations will be discussed, including how stigma and identity impact athletes' mental health experiences, the importance of understanding the perspectives and experiences of those involved in elite sport systems, as well as considerations for counselling and

KEYWORDS

elite sport; Olympic athlete; Paralympic athlete; athlete wellbeing

psychological support service delivery for elite athletes. This presentation will also consider current methodological trends in the field, including the value of qualitative methods and the need for critical thinking around how mental health, mental disorder, and psychological wellbeing are conceptualized and measured. Reviewing these key issues on mental health among elite Canadian athletes will provide an understanding of recent advances and also gaps and limitations in the literature, which can serve as a guide for advancing future research and practice.

Understanding the sport journeys of canadian national team athletes diagnosed with mental disorders

Jessica Fraser-Thomas and Lauren Dickler

York University

ABSTRACT

While elite athletes experience mental disorders at comparable rates to the general population (Rice et al., 2016), understanding and focus on athletes' experiences has been limited, emerging primarily through athletes' stories anecdotally portrayed in social and mainstream media. Recent increased public and academic interest in mental health in sport has been accompanied by a surge in policy surrounding athletes' mental health (Vella et al., 20201); however, it is critical that such policies are informed by comprehensive understanding of athletes' lived experiences. The purpose of this phenomenologically informed study was to explore the experiences of Canadian National Team athletes training and competing with diagnosed mood/anxiety disorders, with a particular focus on their career journeys. Three active or recently retired members of Canadian National sport teams diagnosed with mood and/or anxiety disorders during their sport careers engaged in semi-structured interviews. All participants described navigating a mental health journey that included six key phases, including: (a) recognition of a problem, (b) receiving a diagnosis, (c) continuing to train/compete, (d) making a transition, (e) taking a break or retiring, and (f) seeking treatment. While all athletes experienced the six phases, journeys were not linear - often involving repetitive cycles through phases. A prevalent concern throughout athletes' careers was whether to disclose their diagnosis; participants struggled with the decision to share with coaches, while no athletes shared with their athletic peers. Athletes attributed their disclosure hesitation to a continued stigma around mental health, and the assumption that individuals experiencing mental disorders could not simultaneously be high performance athletes. Interestingly, athletes often viewed and utilized training and competition as a means to manage their mental health. In assessing their continuation in sport, athletes highlighted a need for more transparency about and resource support for mental health within the sport system, which could in turn feed into enhanced education and decreased stigma within the sport community.

KEYWORDS

mental health; stigma; elite athletes; high performance; career pathways

Findings offer insight into athletes' experiences with mood/anxiety disorders at the highest performance levels in sport. In line with recent commentary (Poucher et al., 2021), sport systems influenced athletes' experiences, with stigma and mis-aligned understanding of 'mental toughness' persisting. Future exploration of high-performance athletes' experiences managing mental health in sport should focus on the complex relationship between sport's role in triggering and mitigating symptoms, in conjunction with individuals' identity as an athlete.

Accepting Liminality: olympic and paralympic hopefuls' psychological wellbeing leading up to the rescheduled summer 2021 tokyo games

Erica Bennett, Lisa Trainor, Andrea Bundon, Myriam Tremblay, Staci Mannella and Peter Crocker

The University of British Columbia

ABSTRACT

The COVID pandemic has created much uncertainty and psychological adjustment issues for elite Canadian athletes. Olympic and Paralympic hopefuls have been unexpectedly faced with consistently changing life, training, and competition circumstances and disruptions in relation to the global pandemic and the associated postponement of the Tokyo 2020 Games. The purpose of this research was to examine Olympic and Paralympic hopefuls' psychological wellbeing leading up to the rescheduled 2021 Games. Data from a series of 2 semi-structured interviews with 21 athletes (7 Paralympic; 14 Olympic; 42 interviews total) conducted in the Spring/Summer of 2020 and Fall/Winter of 2020/2021 were analyzed using thematic narrative analysis. Three narratives permeated participants' stories of psychological wellbeing in the age of Covid-19 and associated postponement of the Games, including "it is what it is", "control the controllable", and "navigating liminal space". After initial chaos of lock downs, training facility closures, and cancelled competitions in the Spring of 2020, athletes began embodying an "it is what it is" narrative. They accepted the discomfort of ongoing disruptions and acknowledged the need to adapt to shifting circumstances by adjusting yet continuing to strive for their goals, receiving support from loved ones and sport sector stakeholders, and diversifying their identities (e.g., postsecondary education, leisure). Despite the inability to control the trajectory of the pandemic, athletes lived the "control the controllable" narrative by denoting their autonomy and agency to cope adaptively with cancelled competitions and pandemic-related isolation. This sense of agency gave them purpose and the motivation to continue progressing towards their goals throughout the summer months. In the fall/winter, however, athletes began identifying the challenges of "navigating liminal space" due to the ambiguity and uncertainty surrounding if and

KEYWORDS

psychological wellbeing; elite athletes; Tokyo 2020; narrative methods

how the rescheduled Games would take place. These difficulties led to struggles with monotony, reduced motivation for training, negative affect, increased anxiety, and fear of illness. The findings point to the complex psychological processes and environmental conditions involved in how athletes navigate unanticipated disruptions to their athletic careers and overall lives, and the resultant impact on their abilities to live well and actualize their potential. The findings contribute to existing theorizing by highlighting the importance of attending to shifts in constantly changing circumstances over time and associated uncertainty in shaping psychological adjustment and wellbeing.

Identity threat: the role of identity in shaping canadian athletes' adjustment to the COVID-19 pandemic

Zarina Giannone

Vancouver Psychology Centre

ABSTRACT

Sport has long provided a context for personal and social identity development through which athletes create a sophisticated internal working model of the self, or an "athletic identity", that provides a sense of inner unity and purpose associated with their role in sport. While athletic identity is usually a valued part of one's sense of self and can guide positive adaptation, threats of identity disruption can pose considerable risk to athletes. The wake of the COVID-19 pandemic was one such threat. Many athletes reported experiencing identity confusion, disorientation, and uncertainty that led to diverse behavioural responses ranging from languishing to flourishing. A deeper exploration of athletes' experiences in navigating identity during this unprecedented period can shed light on the significant role that identity plays in the development and maintenance of psychological health and illness. This presentation provides an overview of a Canadian psychologist's therapeutic work with high-performance athletes as they navigate identity disruption and adjustment in the time of COVID-19. It positions identity at the centre of athletes' internal frame through which they derive meaning and develop coping strategies, both adaptive and maladaptive, to manage threats against their identity. The presenter offers a framework that overviews aspects of identity that influence coping and adjustment including rigid cognitive styles, emotional inhibition, and limited external social roles and supports. Common themes that emerged in therapy with athletes will be discussed including grief, helplessness, and experiences of fear, many of which were mediated by one's internalized, evolving model of the self. Clinical observations related to the progression of such experiences and their development into full-blown psychological disorders will also be contributed. Finally, the presenter will provide recommendations on how to work with identity-related problems with athletes during the COVID-19 era and how to incorporate such work with symptom reduction efforts. This

KEYWORDS

athletic identity; athlete mental health; clinical sport psychology; mental disorder

presentation will bring a strong clinical focus and afford scientists and practitioners the opportunity to unpack the identity narratives of Canadian high-performance athletes. It will have implications for professionals across a wide range of disciplines including, but not limited to, sport and exercise psychology, clinical and counselling psychology, social work, and psychiatry.

The acceptability and appropriateness of a collaborative, sport-centered mental health service delivery model for competitive and high-performance athletes

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University of Ottawa

ABSTRACT

There is an accruing body of evidence demonstrating the value and need to provide sport-informed mental health services and resources to address the unique needs and demands of the athletic population (Henriksen et al., 2019; Henriksen et al., 2020; Reardon et al., 2019). Furthermore, research has demonstrated the value of adopting collaborative models of care to support mental health within primary care settings (Eghaneyan et al., 2014). Until the current study was undertaken, a collaborative and sport-focused model addressing the mental health needs of competitive and high-performance athletes did not exist in the literature (Gavrilova & Donahue, 2018; Jewett et al., 2020; Van Slingerland et al., 2019). In 2017, a group of 20 stakeholders from the sport and mental health domains commenced a Participatory Action Research (PAR) project to design, implement and evaluate a novel sport-focused mental health service delivery model applied within a national centre that became the “Canadian Centre for Mental Health and Sport” (CCMHS; Van Slingerland et al., 2019). The purpose of this study was to evaluate the acceptability and appropriateness of the sport-centered, collaborative mental health service delivery model implemented within the CCMHS over a period of 16 months. Primary data were collected from CCMHS practitioners (n = 10) and service-users (n = 6) through semi-structured interviews, as well as from CCMHS stakeholders (n = 13) during a project meeting, captured via meeting minutes. Secondary data derived from documents (e.g., clinical, policy, procedural; n = 48) created by the CCMHS team (i.e., practitioners, stakeholders, board of directors) during the Implementation Phase of the project were reviewed and analyzed to triangulate the primary data. The Framework Method (Ritchie & Spencer, 1994) was used to organize, integrate and interpret the dataset. Overall, results indicate that both practitioners and service-users found the model to be both acceptable and appropriate. In particular, practitioners’ knowledge and experience working in sport, a robust intake process carried out

KEYWORDS

Mental health support; elite athletes; participatory action research; qualitative methods

by a centralized Care Coordinator, and the ease and flexibility afforded by virtual care delivery significantly contributed to positive perceptions of the model. Some challenges associated with interprofessional collaboration and mental health care costs were highlighted and perceived as potentially hindering the model's acceptability and appropriateness. The CCMHS service delivery model featuring collaborative, sport-centered, nationwide, virtual and in-person care is the first-of-its kind in the world. Findings can be used to advocate for increased funding and resources to optimize the mental health of athletes.

Mental health and well-being of athletes in the COVID-19 pandemic

Dev Roychowdhury

Health Research Hub, DR ACADEMY, Melbourne, Victoria, Australia

ABSTRACT

Four presentations are included in the present symposium. Firstly, the relationship between physical activity, health and well-being in the imposed social distance world are reviewed as a general background of the present topic by Dr. Youngho Kim and his colleagues. Secondly, the influence of COVID-19 pandemic on the mental health and well-being of athletes will be examined in detail by two studies. The first study by Dr. Maria Luisa M. Guinto investigates training behavior and subjective experience of athletes during the pandemic. The second study of Dr. Zhijian Huang and his colleagues compare the change of athletes' mood state of athletes before and after the implementation of quarantine measures. Finally, Dr. Dev Roychowdhury introduce the mindfulness practice as a potential strategy to keep mental health and well-being in the long-term.

KEYWORDS

mental health; well-being; athlete; COVID-19; pandemic

Physical activity, health and well-being in an imposed social distanced world

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ABSTRACT

This presentation summarized an article which has been published in International Journal of Sport and Exercise Psychology (doi.org/10.1080/1612197X.2020.1773195) by Papaioanou, Schinke, Chang,

KEYWORDS

COVID-19; physical inactivity; mental health; well-being; pedamic

Kim, and Duda. Physical inactivity (PI) has been called a silent pandemic leading to chronic diseases, but individuals with chronic diseases are exactly those with much higher probabilities to be hospitalized and die from COVID-19. This is a phenomenon which is described as a vicious circle between the two pandemics. COVID-19 has also dramatically boosted the “mental health pandemic” with mental health experts calling for an urgent global response. An editorial in the *Lancet Psychiatry* noted that people living with Mental Illness (MI) are more vulnerable to COVID-19, underlining the interconnections between the COVID-19 and MI pandemics. These two vicious circles plus a third one connecting PI and MI have trapped the world into a deadly three-pronged vicious circle of three pandemics, COVID-19, PI and MI. Social distancing protects us from the virus, but its impact on sport participation and psychological Well-Being (WB) is deleterious. Herein, we will focus on Physical Activity (PA), mental health and WB. We invite readers to consider the challenges for the following populations and to consider new ways of supporting these groups. It is also interesting and important to consider new lines of research investigating the possible effects of the pandemic on PA and WB of these populations. The current presentation implies that the COVID-19 pandemic might be also an opportunity to highlight the interplay of the coronavirus pandemic with the two silent pandemics of PI and MI. Sport and exercise psychologists might inform the public about the importance of PA, friendships and social support during the coronavirus pandemic, reminding how significant to our physical as well as mental health it is to walk or exercise with others. The imposed social distancing might be an opportunity to stress the importance of team spirit and prosocial behavior to youngsters’ happiness and to reminisce how wonderful is to meet and hug our old parents, relatives and friends. We might also underline how valuable is the work of our profession to promote physical activity, mental health and Well-Being.

Sports in quarantine: training behavior and subjective experiences of athletes during the COVID-19 pandemic

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ABSTRACT

The current study investigated the implications of the government-enforced extended community quarantine (ECQ) on sport-related training routines and subjective experiences of Filipino national athletes. A web-based electronic survey was developed and distributed online to all athletes belonging to national teams and national training pool within the first three months of the ECQ. The survey included queries regarding their training regimens before and during the pandemic, and their sentiments and moods during the pandemic. Seven hundred nineteen Filipino

KEYWORDS

COVID-19; quarantine; Filipino athletes; training routines; spirituality

athletes (males: $n = 458$; females: $n = 261$) representing 56.61% of the total number of national athletes responded to the survey. Twenty of them participated in follow-up online interviews to provide a more in-depth understanding of their subjective experience during the ECQ. Although majority of the athletes continued their sports skill practice and strength conditioning at home almost at the same frequency before the pandemic, a significant decrease in self-reported training duration was noted before and after the ECQ. When asked to rate 20 statements that describe their most frequent sentiments during this period, the top three that surfaced were, "I feel closer to God during this time," "I miss competing in my sport," and "I am optimistic that I can get back into form for my sport when this is over." Although the athletes reported feelings of uncertainty, stress, anxiety, and fear, they also experienced positive emotions, such as being alert, active, and vigorous. Thematic analysis of the interview data revealed four major themes that describe the subjective experiences of the athletes: "socio-spiritual support systems," "personal and professional struggles," "alterations in goals and motivation," and "opportunities for growth and self-development." The appearance of spirituality in both the survey and interview data is notable but expected when viewed from the cultural lens. Key recommendations from the study include offering online psycho-socio-spiritual health support services to athletes, assisting them in their home-based sports training, and providing webinars for coaches and conditioning staff to in their transition to the virtual training of athletes.

Influence of quarantined training on athletes' mood in winter training camp during the COVID-19 pandemic

Zhijian Huang^a, Jianghui Kang^b, Jingdong Liu^c and Hao Liu^d

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ABSTRACT

Objective: To investigate the effect of the quarantined management and training under the influence of COVID-19 on athletes' mood changes during 2019-2020 winter training camp. **Methods:** The Profile of Mood State (POMS) was used twice per week to monitoring the changes of mood of 217 athletes in a provincial sports training center in southern China for four weeks. Two weeks were before the implementation of the quarantine measures, and another 2 weeks were after that. **Results:** The four-weeks average level of Total Mood Disturbance scores (TMD) of female athletes were significantly higher than male athletes ($p = 0.000$). The TMD scores of athletes in different sports (Taekwondo, Judo, Boxing, Greco-roman Wrestling and Freestyle Wrestling) were significantly different ($p = 0.000$). There were significant differences in athletes' scores under different training intensities, The TMD scores in high intensity training days were significantly higher than low intensity days ($p = 0.002$). After the implementing of quarantine measures caused by the outbreak of COVID-19

KEYWORDS

winter training camp; COVID-19; mental health; mood state; quarantine

pandemic, the scores of athletes' Fatigue ($p=0.000$) and Self-esteem ($p=0.021$) were significantly lower than those before. The scores of Energy showed a downward trend. Discussion and conclusion: Quarantine measures during the winter training camp made significant changes to the training routine and off-training activity of athletes. More importantly, the annual competition schedule was postponed or canceled, which significantly influenced the self-esteem of the athletes. On the other hand, daily training intensity and load has a significant impact on the score of Fatigue, while major public health crisis and corresponding quarantine measures might also cause the decline of athletes' self-esteem, which lead to the rise of other negative emotions. Necessary assistance interventions are suggested to keep mental health and well-being of athletes during the COVID-19 pandemic.

Mindfulness practice to help assuage the detrimental effects of confinement, physical inactivity, and sedentarism

Dev Roychowdhury

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ABSTRACT

In the past year, COVID-19 pandemic has emerged as a major biomedical, economical, psychological, and social threat. The contagion has radically impacted and altered the lives of billions of people around the world. Due to strict government policies, most individuals have found themselves confined indoors with limited movement permissible. Although these measures are enforced to help abate the rate of infection, such restrictions have huge implications for psychophysiological health, lifestyle, and overall quality of life. Various epidemiological, experimental, clinical, and longitudinal studies on confinement and isolation have reported profoundly detrimental effects on the psychological and physical health of individuals. This has also been consistently linked with a range of risk factors for poor health, undesirable health outcomes, increased morbidity, and early mortality. Furthermore, the current altered, confined, and isolated lifestyle globally has also impeded people's ability to invest in their physical health, fitness, and movement. The current confined and isolated circumstances, coupled with the gradually declining levels of physical activity and rising levels of sedentarism that is already prevalent in the modern society, can have deleterious effects on the psychological, physical, and social health of individuals. Given current confinement and isolation requirements, limited freedom and space for movement, and severe punitive actions for breaching lockdown measures, along with globally declining levels of physical activity and increasing amounts of sedentary behaviours, there is an insistent need to develop novel and innovative approaches that can simultaneously foster a sense of positive health and well-being and alleviate adverse health effects caused by confinement,

KEYWORDS

mindfulness; pandemic; confinement; isolation; health behaviour

physical inactivity, and sedentarism, under the current circumstances. This paper argues for essential measures to be introduced that would not only mitigate the adverse effects of COVID-19 confinement, physical inactivity, and sedentarism in the short-term, but also promote psychophysiological health and well-being in the long-term. This paper advocates the practice of mindfulness as a potential strategy considering the current context. This paper further discusses the health benefits of mindfulness practice and introduces two effective and novel exercises - mindful breathing and mantram chanting - that could be suitably utilized under current altered and confined COVID-19 arrangement. Novel ways to introduce mindfulness at individual and community levels have also been addressed.

Body image and sport: a partnership symposium with the health behaviour and emotion lab

Catherine Sabiston

University of Toronto

ABSTRACT

The Health Behaviour and Emotion Lab has extensively focused on body image research and practice. In this symposium, the importance of studying body image will be discussed with reference to recently completed research studies using quantitative (prospective longitudinal and cross-sectional) and qualitative (description, phenomenology) approaches. Body image will also be defined and contextualized within broad mental health and self-regulation frameworks. The first presentation offers a descriptive overview of the value of studying body image as a barrier and benefit to sport in a Canadian context among youth. The findings clearly demonstrate differences in the way body image may impact sport participation and experiences for adolescent boys and girls. In the second presentation, a meta-synthesis of qualitative research focused on body image and sport highlights the predominant focus on elite athletes, girls and women, and a lack of representation of other identity factors. The methodologies are quite homogeneous and gaps and future directions are presented. In the third presentation, new measures to expand body image affect are identified. Data from adolescent girl athletes are used to validate the items to assess envy and embarrassment and to situate these self-conscious emotions within a framework of existing measures to examine body-related shame, guilt, and pride. In the fourth presentation, a collaborative partnership with the National Eating Disorder Information Centre has led to the development of a sport-specific body image program and resource. Details on the collaborative work and main outcomes will be presented. Taken together, this symposium demonstrates the importance of focusing on body image in sport while also identifying ways to mitigate negative body image and to foster positive body image among athletes.

KEYWORDS

body image; sport;
quantitative; qualitative;
physical self

The symposium includes a focus on context, theory, measurement, and programming and will end with a brief discussion of future directions and next steps for research and practice.

Adolescent body image in the sport context: a canadian perspective

Madison Vani and Catherine Sabiston

University of Toronto

ABSTRACT

Sport can have an influential role in long-term physical, social, and psychological well-being for adolescents. However, boys and girls tend to differ in their level of sport engagement and have distinct sport experiences. Body image concerns during adolescence may be one barrier that underscores the gender disparity in sport participation and experiences. Adolescence is marked by higher reports of negative body image, with adolescent girls being particularly vulnerable to experiencing body image concerns. As such, body image may limit sport participation or impact sport experiences. Yet, participation in sport might also yield positive impacts on body image. Thus, it is important to better understand perceptions of body image as a barrier to and benefit of sport among adolescents. The purpose of this study was to examine the prevalence of body image as a reported sport barrier and perceived benefit among Canadian adolescent girls and boys. The prevalence of body image as a reported barrier and benefit was also compared to other common sport barriers and benefits. Adolescents ($n = 1009$; $M_{age} = 15.85$; $SD = 1.61$ years (range = 13–18 years); 52.6% boys; 73.2% Caucasian; 83.2% heterosexual) self-reported on their sport participation, barriers, and benefits via an online Canada-wide survey. Descriptive statistics (means, frequencies, percentages) were calculated. Results demonstrate that 58.9% of boys and 41.3% of girls reported participating in sport weekly. Approximately 1 in 3 girls (32.5%) and 1 in 6 (16.0%) boys reported body image as a sport barrier. In comparison, other commonly reported barriers included lack of access (girls: 66.6%; boys: 53.1%), confidence (girls: 34.8%; boys: 19.5%), and skill (girls: 33.2%; boys: 28.2%). Approximately 3 in 8 girls (38.7%) and 1 in 4 boys (28.6%) reported that sport was beneficial for their body image. Other commonly reported benefits of sport included physical health (girls: 74.5%; boys: 76.3%), fun (girls: 67.7%; boys: 71.5%), and social (girls: 66.9%; boys: 61.2%). These findings suggest that body image is a key aspect of the sport environment, especially for Canadian adolescent girls. Therefore, the role of body image within sport participation and experiences requires greater attention.

KEYWORDS

adolescence; sport; body image; barriers; benefits

A meta-synthesis of body image and sport: a decade in review

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ABSTRACT

Body image concerns are a major reason for poor sport experiences and sport drop-out. While qualitative research has highlighted the complex relationship that exists between body image and sports within various populations, a synthesis of existing work is needed. The aim of the current meta-synthesis was to describe qualitative research on body image within the sport context, and to explore the contexts and experiences of body image and sport. Search strategies from Sabiston et al. (2019) were utilized and expanded upon to include peer-reviewed qualitative studies that focused on body image and sports from January 1st, 2010, to December 31st, 2020. Overall, 38 qualitative research articles were identified and assessed for quality using the Mixed Methods Appraisal Tool (MMAT; Hong et al., 2018), and descriptive statistics were generated to compare study characteristics, and an inductive thematic synthesis was used to synthesize the evidence. Based on the results, qualitative research focused on body image and sport has increased over the decade; however, these studies are relatively homogenous with regards to sample and methodology. Furthermore, many studies did not include an identification of a strategy of inquiry. Researchers tended to utilize thematic analyses to analyze one-on-one semi-structured interviews investigating the body image experience of predominantly young adult Caucasian women athletes. Moreover, most of these studies investigated body image in elite level current or former athletes. Thus, current research investigating the impact of sport on body image may really be focusing on the body image experiences of elite athletes' while ignoring this relationship in more general populations, of varying identities and abilities, across the lifespan. Generally, the field of body image and sport is complex and is limited by the lack of diverse populations being investigated. Results from the current meta-synthesis serve as a description of the current field of qualitative research investigating body image within the sports context, and also serves to provide direction for future research.

KEYWORDS

meta-synthesis; qualitative; body image; sport

Validation of the Body Appearance and Fitness Envy (BAF-ENV) and Embarrassment (BAF-EMB) scales in adolescent girls

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ABSTRACT

Self-conscious emotions of shame, guilt, and pride are important body image emotions that contribute to girls' sport experiences, well-being, and engagement in health behaviours. However,

KEYWORDS

envy; embarrassment; self-conscious emotions; girls; sport

there are additional body-related emotions that remain under-investigated within sport despite their strong theoretical connection to the context. The socially evaluative and comparative nature of sport puts the body on display; theoretical tenets suggest this type of environment may be particularly conducive to feelings of body-related envy and embarrassment related to how the body looks and what the body can do. As such, measuring envy and embarrassment contextualized to the body's appearance and function may help broaden the understanding of how affective body image impacts girl athletes. The purpose of the present study was to validate two new self-report instruments to assess body-related envy and embarrassment: the Body Appearance and Function Envy Scale (BAF-ENV) and the Body Appearance and Function Embarrassment Scale (BAF-EMB). Adolescent girl athletes (N = 510, Mage = 14.01, SD = 1.4) completed the scales, and additional validated self-report measures of body-related self-conscious emotions, physical self-concept, affect, well-being, and sport-related experiences. A confirmatory factor analysis assessed factor structure, while Bivariate correlations and Fisher's Z transformations assessed convergent and discriminant validity. Consistent with hypotheses, a two-factor structure (appearance and functional domains) was confirmed for both envy [$\chi^2(15) = 33.40, p < .001, CFI = .99$] and embarrassment [$\chi^2(15) = 31.31, p = .008, CFI = .99$]. The appearance and function subscale items of the BAF-ENV and BAF-EMB demonstrated internal consistency coefficients of $\alpha = .89$ and $.87$ and $\alpha = .89$ and $.91$, respectively. Evidence of convergent and discriminant validity was demonstrated by significant associations with adaptive psychological constructs (e.g., flourishing, self-compassion) maladaptive psychological constructs (e.g., body surveillance, negative affect), and other body-related self-conscious emotions in the expected directions. The BAF-ENV and BAF-EMB will allow further research exploring body-related self-conscious emotions in girls sport to capture a broader range of emotions that have implications for sport experiences and mental health in adolescent girls.

Co-Developing athletes embodied with community sport stakeholders and national partners: a body image promotion program for adolescent girls in sport

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^aWestern University; ^bNational Eating Disorder Information Centre; ^cUniversity of Toronto

ABSTRACT

Body image and gendered sport-specific appearance pressures are key factors that may contribute to the gender disparity in sport participation which disfavours girls. Researchers and sport practitioners have identified that widespread, sustainable, and feasible body image promotion programs are necessary, however

KEYWORDS

eating disorders; community partnership; female athletes; education

the availability of such resources in Canada is vastly limited. The National Eating Disorder Information Centre (NEDIC), which serves as Canada's primary resource education centre for eating disorders and related issues, has noted demand from sport-based organizations to provide resources in the form of freely accessible online resources with a national focus. In partnership with NEDIC, the aim of this research was to develop an evidence-based, accessible, and stakeholder-informed body image program – Athletes Embodied – to be disseminated and implemented to youth sport organizations across the country. In the first phase of program development, a systematic scoping review was conducted in partnership with NEDIC to evaluate the critical content, features, and components of existing interventions. The results of the scoping review were presented to community, provincial, and national sport stakeholders across Canada in eighteen focus groups (n=59). Sport stakeholders were consulted on how existing research could be integrated in the development of the Athletes Embodied program. Stakeholders indicated the need for a program that could be adapted to all sport contexts, with buildable lesson plans and the use of multiple teaching mediums. Stakeholders suggested the use of a coach-facilitated standardized body image training module that would serve as a requirement of current national coaching certification and safe sport training. Stakeholders emphasized the importance of broad organizational commitment to challenge sport-related sociocultural attitudes that may limit program uptake. The synthesis of this partner-driven and stakeholder-informed knowledge has shaped the ongoing development of the Athletes Embodied program, and its future online dissemination. By leveraging partnerships with well-established and influential organizations, we can advance knowledge mobilization efforts and develop the capacity to implement national large-scale body image promotion and disordered eating prevention efforts.

Overview of women in sport in Japan

Mieko Ae

Tokyo Women's College of Physical Education

ABSTRACT

In December 2020, the 5th Basic Plan for Gender Equality was decided in Japan. In the seventh field, it supports the formation of specific plans to achieve the target ratio (40%) of female directors in "the Governance Code for Sport". In spite of that, on February 12, 2021, Yoshiro Mori, Chairman of the Tokyo Organizing Committee for the Olympic and Paralympic Games, announced his resignation. It was because he made sexist statements to the female director, criticizing his qualifications as chairman of the organization. The problem was that "there are extremely few female officers in various public organizations, government offices, companies, etc. in Japan", which

KEYWORDS

women in sport; gender equality; harassment

discriminates against women. Taking this opportunity, women workers all pointed out the same experience. Unfortunately, the Japanese sports world has continued the traditional male dominance society (although not as much as in the Faculty of Science and the Faculty of Engineering). In this presentation I will introduce the current situation of women's sports in Japan from the standpoint of researchers and competitive sports. In Japan, sports started with physical education. The number of physical education teachers is overwhelmingly male, and female teachers have a history of being hired only to teach dance. In the stable environment after World War II, women's competitive sports became popular. However, violent coaching from male teacher-coaches who are enthusiastic about victory was directed to female students, and became big social issues. With the expansion of women's rights worldwide, Japanese women are becoming more active in sports, and at the 2004 Athens Summer Olympic Games, more women participated in than men in Japan. Female researchers, female coaches, and female executives in organizations involved in sports are beginning to change with the introduction of the quota system in various organizations. However, the male dominance ideology that pervades society as a whole and the male power harassment that promotes it are deep-rooted. It is clear that the proportion of female officers will be kept small unless the quota system is introduced. In Japanese Society of Sport Psychology, directors are 3/23, female ratio is 13% (2021). On the other hand, in Japan Society of Physical Education, Health and Sport Sciences, directors are 9/25, 36% female ratio due to introduction of quota system (2021). There is a need for greater acceptance of diversity throughout Japanese society.

Perspectives on gender equality actions in Tokyo 2020 olympic and paralympic games and beyond

Naoko Imoto

N/A

ABSTRACT

As an ex-Olympic swimmer and a former Japanese record holder who represented the country over 10 years, it was rare to see a female coach, or a female board member in the federation throughout my athletic career in the 90's. Twenty years later, the situation has seen very little change. Having worked overseas for 14 years as UNICEF's Education Specialist, the sexist comments by Mr. Yoshiro Mori, the ex-president of the Tokyo Olympic and Paralympic Organising Committee, in February 2021 initially dumfounded me. Yet, it very soon reminded me of the same old male-dominated culture twenty years ago. His successor, Ms. Seiko Hashimoto, then Minister of the Tokyo Olympic and Paralympic Games as well as Minister in charge Women's Empowerment, immediately set up a team for gender quality promotion within the Tokyo 2020 organising committee. As an advisor for the gender equality promotion team, my presentation

KEYWORDS

Tokyo2020; gender equality;
Japanese sports industry

will aim to summarize: 1) my observations of the gender equality actions in the Tokyo Games as well as the current status of Japanese sports industry, based on the International Olympic Committee's Gender Equality Recommendations, and 2) my perspectives towards the direction of gender equality actions within a wider framework of the Japanese sports industry. In fact, the actions being made by the Tokyo 2020 organising committee are merely symbolic and not enough to tackle the intrinsic problems of gender inequality in the Japanese sports industry. However, it is in our hope that those symbolic actions made before and during the Tokyo Games will lead to further actions by relevant sports organisations in Japan with medium and longer-term goals. In order to effectively achieve gender equality in Japanese sports industry, multiple efforts need to be made such as: firm commitments by the leaders of the key sports organisations, awareness change by both women and men, reduction of gender bias, guidance and empowerment actions to support female leaders and coaches, to name a few. From my experience working in the United Nations whose mission is to eliminate gender inequality, gender equality can only be achieved through 'mainstreamed actions', and not by making specific actions targeting female athletes and coaches in specialised sections within organisations.

Reflection of a woman scholar-practitioner transitioning between the U.S. and Japan

Moe Machida-Kosuga

Osaka University of Health and Sport Sciences

ABSTRACT

In this presentation, I reflect my experiences as a woman-scholar practitioner transitioning between the U.S. and Japan and suggest the ways by which all individuals who are involved in sport can be empowered. First, I discuss how my awareness and mindset regarding gender issues had changed through my years as an undergraduate student, a master's student, and a doctoral student in the U.S. university system. As I interacted with mentors and colleagues, gaining knowledge, and understanding regarding gender issues in sport and society at large, I had questioned and challenged my preconceived assumptions about gender. These experiences also made me to pursue research endeavor on women and leadership in sport, which allowed me to contemplate on experiences of women who are working in men-dominated fields, and further reflect on myself as a developing woman scholar-practitioner in sport science. Second, I discuss the reactions that I had toward what I experienced and observed when I entered into the fields of sport and the academia in Japan. Gender seemed to have different meanings in Japanese culture, and there were experiences that made me revisit what it meant to be a woman. Through working as a scholar and a practitioner, I realized that there are differences, but also

KEYWORDS

career transition;
empowerment; women and
leadership

commonality in gender issues that Japan and the U.S. are facing. In both societies, though women and men are equal in their ability and capability as leaders, there are environmental factors that hinder them to advance their careers and do not allow women to see becoming a leader as an attractive career choice in their respective fields. Finally, based on the reflections of my experiences that I had in living in the U.S. and coming back to Japan, I discuss how we as a society can truly value diversity and move forward in these important issues. Specifically, I discuss how we can create an environment that facilitate women's leader development and making "being a leader" as a suitable career choice for women. Also, I discuss the attitudes and actions that we can take as a woman-scholar practitioner who will lead the change for the future.

Experience of a female sport psychology professional

Kaori Araki

Sonoda Women's University/ CORAZON Co., Ltd.

ABSTRACT

The purpose of the presentation is to share my experiences as a female sport psychology professional and raise awareness of how our experiences are different from our male counterparts. Sporting culture in Japan has been male-dominated. Every single report showed that a sport participation rate for the female is lower in any age range than male. Since 2010, several statements for sport have been announced by the government and related bodies include gender issues. For example, the Ministry of Education, Culture, Sports, Science and Technology in Japan published the strategy for sports nation in 2010 which includes two policies related to women in sport for the first time in history. Under the key policies, "create an environment friendly to the female athlete," and "ensure the fair and equitable management of sport associations" were settled. In 2015, Gender Equality Bureau Office reports the needs for support for female athletes include build a childcare facility at a training site, developing of coaching education program (to overcome childbirth and childcare periods), and the increasing number of female board members at the related organizations to 30% by 2020. Regardless of the statements, changes have not been visible for women in sport. For example, high school athletes in 2020 include only 35.75% girls and it has been almost no difference from 36.93% in 2003. Sixty-seven organizations under Japan Olympic Committee include only 14.24% female board members in 2019. In addition, there is no report regarding the number of child care facilities nor influential coaching education programs for female coaches. The policy is stated but it is only about childbirth, child care, and the number of female board members and we hardly see the changes. It is mainly because the policymakers don't know the experiences of women in sport. Related to the issue, there has been no discussion about female

KEYWORDS

women in sport science;
gender equity; motherhood

sport scientists such as researchers and practitioners in sport science discipline. Not surprisingly, sport science is a male-dominated discipline. Lack of scientific research by women, lack of education by female professors, and lack of experience as a female consultant affect current and future experiences of women in sport. It is a great challenge to keep on teaching, conducting research, publishing articles, and consulting with athletes and coaches during pregnancy and after giving birth. I hope my stories will empower young scholars to continue to thrive in a discipline and gain an understanding of women in sport.

The knowledge is power: experiences of Japanese women in sport and sport science

Hiroshi Miki

Ryutsu Keizai University

ABSTRACT

In February 2021, Yoshiro Mori, a former chairman of the Tokyo Organizing Committee for the Olympic and Paralympic Games, resigned due to his sexist remarks. It wasn't the first time he made such a statement, but it attracted international attention because he was in the position of chairman of the Olympic and Paralympic Organizing Committee. This revealed that women are perceived from a sexist perspective in Japan, and at the same time, it led to the momentum that we had to change this situation. Under these circumstances, this symposium was planned by Dr. Kaori Araki, the chairperson of the International Affairs Committee of the Japan Sports Psychology Association. In response to Dr. Araki's call, women of different ages who have been involved in sports and sports science from various positions gathered. At this symposium, we will clarify the past and present situation of women experts in sports and sports science, and discuss issues and measures to be tackled in the future. First, as an introduction, Mieko Ae traces the background of the male-dominated Japanese sports world, and points out the fact that Japanese competitive sports were supported by school physical education where male teachers were dominant and that violence by male teacher-coaches who are enthusiastic about victory was directed to female athletes. Kaori Araki, the first speaker, mentions the statements and strategies announced by the government and the related organizations such as the Ministry of Education, Culture, Sports, Science and Technology in Japan since 2010, while women's participation in sports, the environment of female athletes and leaders and the opportunities for women to participate in decisions have not improved. The second speaker, Nahoko Imoto, is a former Olympic athlete and an advisor for the gender equality promotion team within the Tokyo 2020 organizing committee. She introduces the gender equality actions in the Tokyo Games as well as the current status of Japanese sports industry and gives her view on gender equality actions in Japanese sports industry in a broader framework. The third

KEYWORDS

Women in sport; women and gender studies; women in sport science; diversity; Tokyo2020

speaker, Moe Machida-Kosuga, reflects how her awareness of gender issues changed through her student life in the United States and her reactions when she stepped into the fields of sport and the academia in Japan. Based on these experiences, she discusses how we can truly value diversity and how we can create an environment that facilitate female leader development.

Culturally grounded sport psychology during the COVID-19 pandemic and beyond: the AASP's perspective

Alessandro Quartiroli

UW - La Crosse (US)/University of Portsmouth (UK)

ABSTRACT

With this partnership symposium we hope to be able to share the experience of and lessons learned by the Association for Applied Sport Psychology (AASP) in supporting the development, implementation, and delivery of culturally grounded sport psychology services during the challenging times of the recent COVID-19 global pandemic. The symposium will aim to first introduce the organization and its mission, and then it will focus on sharing the experience that AASP and its members have had in supporting athletes, clients, practitioners, professionals, and organizations during the difficult time of the global pandemic. With this first brief introduction, Dr. Quartiroli will briefly present the organization, the scope of the symposium and the speakers, who are all members of the AASP Executive Board, and their presentations. Then Dr. Ballesteros will provide an insight of the lessons learned from working with athletes of color during the pandemic and the ways multiculturalism and diversity have helped and may help with the process. Then, Dr. Gunter will offer her reflections about the role that mental health play in sport and the importance of including mental health in sport psychology services delivery, and how mental health is influenced by individual (e.g., personal cultural identities), social (the communities were a part of) & societal (discrimination, injustice) cultural factors. Then Dr. Carter in collaboration with the chairs of the Division and Inclusion subcommittees will shared a series of reflections focused on how to strengthen organizations' overarching commitments to diversity and inclusion, promote inclusive environments within organizations, and enhance members' culturally focused professional practice knowledge based on the experience of the AASP's Diversity and Inclusion Division. Finally, the panelists will close the symposium offering a series of closing reflections, starting from the presentations and expanding across future directions for applied and organizational practices as well as scholarly endeavors.

KEYWORDS

AASP; Diversity, Equity, and Inclusion; Professional practice

Lessons learned while working with athletes of color during a global pandemic

Jorge Ballesteros

Arizona State University

ABSTRACT

The COVID-19 pandemic has presented vast challenges and obstacles for athletes and performers across the United States and around the world. In the US, at the start of the COVID-19 pandemic, all sport related activities for both professional and collegiate athletes were suspended. Although data on the effect of COVID-19 related disruptions on athletes' lives is still emerging, researchers are beginning to identify the negative impact the pandemic has had on this population. For example, Senisik et al. (2020) reported that compared to non-student-athletes, student-athletes reported higher levels of mental distress during and after the pandemic. Of special interest for this discussion are athletes of color, who, in addition to the direct health-related consequences of the global pandemic, also had to endure many additional difficulties such as racism and social injustices. In a nationwide study conducted by the NCAA, athletes of color reported experiencing high rates of mental distress as a result of the pandemic (NCAA, 2020). Specifically, they cited personal experiences of racism or racial trauma which negatively impacted their mental health (NCAA, 2020). Therefore, it is crucial to discuss the ways in which during the COVID-19 global pandemic, providers helped this subpopulation of athletes to navigate the challenges of the health emergency as well as those related to the connected to their mental health. Highlighted within the discussion will be the importance of maintaining the values of diversity and inclusion while working with athletes of color through zoom and other online platforms. Furthermore, lessons learned will be shared by the presenter that surround focusing on the athlete as a person, providing space to discuss the racial injustices that were being witnessed and endured, and acknowledging the systems that these athletes were managing within the global pandemic. Additionally, few recommendations on how to effectively prepare to help and assist athletes of color through their post-pandemic athletic season will be shared.

KEYWORDS

Clients of color; Diversity;
Multiculturalism

Athlete mental health: navigating the intersection between mental health, sport psychology and diversity during the COVID-19 pandemic and beyond

Kensa Gunter

Gunter Psychological Services

ABSTRACT

More than an athlete. Person before performer. Athletes are people first. In the last several years, more and more athletes have added their voices to the conversation around mental health in sport (Cambage, 2019; Love, 2020; McBride 2020) and in many ways, they are driving the discussion about the importance of decreasing the stigma, viewing mental health as a component of overall health, and increasing the available resources and support for this community. In the wake of the events of 2020 and now 2021, these conversations have been elevated. In addition to dealing with the impacts of the global health crisis that resulted from the COVID-19 pandemic, athletes have also been managing the range of emotions associated with the revitalized movement around social justice that erupted in the United States and quickly spread across the globe in the spring/summer of 2020. Many athletes were at the forefront of these efforts in their respective communities adding another layer of emotional labor and toll on their experience. Consequently, mental health and the ways in which all of these events have impacted athletes' emotional wellness have been primary topics of focus and discussion (Alkhoury, 2021; Gregory, 2020). Mental health is impacted by a host of cultural variables including individual, social and societal factors and we live at the intersection of these factors. Therefore, as sport psychology professionals, it's important for us to make an effort to understand who our athletes are and the contexts in which they live to better understand what may be contributing to their mental health and what may facilitate increased wellness and performance both on and outside of their field of play. Increasing one's knowledge about mental health, understanding how mental health may connect to athletic performance, developing cultural competence (Sue & Sue, 2013) and adopting a posture of cultural humility (Hook et al., 2013) are things that professionals can do to better position themselves to offer support and be a resource to their athletes.

KEYWORDS

Athlete mental health; Cultural competence; COVID-19; Professional practice

From start to finish: reflections on implementing DEI Initiatives from AASP's diversity and inclusion division

Leeja Carter^a, Jana Fogaca^b, Amanda Perkins-Ball^c and Tanya Prewitt-White^d

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ABSTRACT

The Association for Applied Sport Psychology (AASP) is an international sport and performance psychology organization that centers athletes' and performers' mental health and mental performance needs. AASP boasts more than 3000 members, who specialize in evidence-based practice and research, making AASP pivotal to advancing the sport and performance psychology field.

KEYWORDS

AASP; Diversity and Inclusion; Sport psychology

Essential to the health of any association, establishing an inclusive association culture remains core to AASP's values (AASP, 2021). AASP strives to promote inclusive environments for all members and is committed to its members' individual growth and development around multiculturalism, advocacy, and global diversity and inclusion. Through collective reflections and recommendations AASP's Diversity and Inclusion (D&I) Division which includes AASP's Diversity Committee, Advocacy Committee, International Relations Committee, and Diversity & Inclusion Council, this presentation will discuss how the organization has strived to strengthen its commitment to diversity and inclusion, promote inclusive environments, and enhance members' culturally focused professional practice knowledge and understanding. These strategies include initiatives that the association has initiated to advocate for and foster the physical, emotional and psychological well-being of individuals within AASP, particularly those within historically and intentionally ignored communities, the process and importance of creating and implementing inclusion and diversity-focused initiatives to maintain a welcoming and healthy organizational environment, and the ways AASP's D&I Division approaches the layered and challenging work around diversity, equity, and inclusion (DEI). The presenter, on behalf of the authors, will conclude with a discussion of the directions that AASP will continue to follow in fostering its efforts and will present the future goals that AASP wants to achieve within this space and the strategies that are in place to reach these goals.

What have we learned and where do we go from here

Alessandro Quartiroli^a, Jorge Ballesteros^b, Kensa Gunter^c and Leeja Carter^d

^aUniversity of Wisconsin - La Crosse (USA); ^bUniversity of Portsmouth (UK); ^cArizona State University; ^dGunter Psychological Services; ^eLong Island University – Brooklyn

ABSTRACT

In this final presentation of the symposium, the presenters will discuss the different topics addressed in the symposium highlighting the red thread connecting them and expanding upon them in a collaborative space characterized by questions and answers. Starting from the connection between health and performance, they will highlight how sport psychology professionals and organizations can work together to enhance the mental side of athletes' performances while also supporting their mental health and wellbeing. Aware of the existing international differences and legal/professional boundaries characterizing the profession from different countries and the experience of professionals around the world, they will offer their experience of how AASP is striving to foster the development of more culturally aware and competent sport/performance psychology service delivery practice that encompasses mental wellbeing and addresses social justice. They will then move to offer their thoughts about how AASP can play a role within the international sport psychology professional landscape to support

KEYWORDS

AASP; Professional practice; Cultural competence; Diversity, Equity, and Inclusion

the development of a more inclusive and equitable sport/performance psychology profession, including both applied practice as well as scholarly work. Specifically, they will share some of their own reflections, based on their experiences as members of the AASP's executive board of how the association, in collaboration with the ISSP and other international organizations, can contribute to an internationally inclusive and culturally aware professional practice through collaborations and interactions. Finally, the presenters will share their own reflections of how AASP and other professional organization can extend their individual and concerted efforts to promote inclusive professional environments and providing opportunities to their members and the professional community to grow their own awareness and commitment to diversity, inclusion, and equity from a local to a more global perspective. To conclude a few reflections will be offered about the work that still needs to be done and how they foresee AASP and the sport psychology field in general to address these needs.

“Well-Being” of athletes during and after the COVID-19 lockdown. ASP symposium

Alexandra Banayan

Federal state budget institution «Saint-Petersburg scientific-research institute for physical culture»

ABSTRACT

The symposium is organized by the Association of Sports Psychologists of Russia and CIS Countries, created in September 2020 consolidating scientific schools of sport psychology from different regions. The aim of the symposium is to present the sports psychologists' contribution to the psychological support of athletes, while the pandemic technical difficulties. Key topic of the symposium is to designate those personal resources that contribute to the "well-being" of athletes, providing overcoming difficulties in the context of the Covid-19 pandemic and in subsequent periods. The importance of the "well-being" of athletes is set as a key goal in the organization of psychological support for athletes by sports psychologists from youth to elite sports. It is important to note that it was Russian sports psychology that has always placed the personality of an athlete and his ability to overcome difficulties at the center of research. The aim of the symposium is to show the use of Russian sports psychology heritage, in the implementation of the psychological support for athletes' performance. The first speaker is the researcher of the laboratory of sport psychology and psychophysiology of the Federal state budget institution «Saint-Petersburg scientific-research institute for physical culture», Viktoria Georgiadi will summarize more than 50 –years scientific and practice experience in preparation of elite athletes. The second speaker, Inna Syrykh from Saint-Petersburg State University will present the results of a comparative analysis of the self-regulation difficulties among athletes and female students

KEYWORDS

athletes' psychological encouragement; cultural practice; individual approach; scientific heritage; sports success prediction

who are not involved in sports during the COVID-19 lockdown. Third speaker Sokhlikova Valeria with coauthors will observe the structure and the content of developed system of psychological support for athletes during the COVID-19 lockdown by use of the somatic trauma technique - SIBAM. The fourth speaker, Lyudmila Rogaleva with coauthors, will present the results of comparative data on personality determinants, such as perfectionism, coping strategies, which ensure the psychological well-being of Bulgarian and Russian athletes during the period of self-isolation. Our final discussion based on all four keynotes will demonstrate the actuality of the personality predictors' roles in achieving "well-being" and as a consequence the athletes' performance and their sports results in the current context and in the future.

Difficulties of self-regulation during the COVID-19 pandemic among female athletes and non-sport female students

Inna Syrykh and Alexandra Lovyagina

Saint Petersburg State University

ABSTRACT

Introduction. Students' habitual lifestyle have significantly changed during COVID-19 pandemic. Necessity to observe self-isolation have made increased demands to female self-regulation (as it is vital for women to be emotional, anxious, and have tendency to build close relationships). It's well known that athletic activities facilitate development of mental qualities, such as self-sufficiency, self-confidence, perseverance and so on, which are important for self-regulation. Therefore, it seems to be quite relevant to investigate self-regulation features among female athletes and non-sport female students. Research goal: comparative analysis of self-regulation difficulties and self-regulation techniques during COVID-19 pandemic self-isolation among female athletes and non-sport female students. Research methods. There were used questionnaire Style of Self-Regulation Behavior (by V.I. Morosanova) and questionnaire developed by the authors of this study. Participants were 122 female students of Saint-Petersburg state University at the age of 18-23. 57 of which are professional athletes (rhythmic gymnastics, track and field, alpine skiing) with sports experience 4-17 years. 65 participants are non-sport female students. Results. According to collected data, there are no statistically significant differences among female athletes and non-sport female students' evaluation of self-regulation difficulties during COVID-19 pandemic. The majority of respondents from both groups estimated self-isolation difficulties as «as difficult as many others in life». Female athletes students compared to non-sports female students had more difficulties in action planning for goal achievement (Student's t-test, $t = 1,991$; $p 0,05$), they also had worse results in experience consideration for decision-making (Student's t-test, $t = 1,985$; $p 0,05$). Non-sport female students faced problems in emotional control, especially fear, annoyance, anger (Student's t-test, $t = 2,623$; $p 0,01$). Both

KEYWORDS

self-regulation; COVID-19; female athletes

athletes and non-athletes, who had higher level of awareness of ideas about external and internal significant conditions (scale modeling according to Morosanova questionnaire), better analyzed situation (Pearson test for female athletes, $r = -0,322$, $p = 0,05$; Pearson test for non-athletes, $r = -0,561$, $p = 0,001$) and better evaluated their actions (Pearson test for female athletes, $r = -0,384$, $p = 0,05$; Pearson test for non-athletes, $r = -0,316$, $p = 0,05$). Conclusion. Female athletes were more successful in controlling their emotions during COVID-19 pandemic and self-isolation. However, absence of possibility to train in regular mode have made plans development for female athletes more complicated.

Psychological state of athletes from Bulgaria and Russia in lockdown during COVID-19

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^aUral Federal University; ^bNational Academy named after Vasil Levski; ^cUral State Medical University

ABSTRACT

The Covid-19 pandemic has had a significant impact on all aspects of people's lives, including sports. The aim of the study was to determine the impact of the lockdown situation on the psychological state of athletes. The study involved a total of 199 student-athletes from 18 kinds of sports and their ages range from 16 to 32 years. The study was conducted online in Bulgaria and Russia during 13-30 April, 2020, under an emergency state related to the COVID 19 pandemic declared in both countries. The socio-demographic questionnaire (Aurelio Olmedilla, 2020) and the methods "Profile of psychological States" (McNair, Lorr, & Droppleman, 1971), Multidimensional Perfectionism Scale (FMPS, 1990) were applied to the survey. To process the initial data of the study, we used the statistical program SPSS 21. In the course of the study, we studied the influence of three factors on the psychological state of athletes during the lockdown period: the qualification level of athletes, gender, as well as the role of perfectionism as a personal predictor of the psychological well-being of athletes. According to the data obtained, the lockdown policy was the greatest factor that led to tension increase equally in all athletes. At the same time, there were significant differences in the indicators of the state of depression, depending on the qualification of athletes ($p < 0.05$). With the growth of sports skills, the level of depression decreases and ability to avoid external adverse factors increases. According to gender, there are significant differences between females and males in such indicators as depression, anger, energy (activity), fatigue. For majority of females, they have suffered from a depression situation while a lots of males show angry emotions. It was also noted that compared with females, young males have higher indicators of energy and lower indication of fatigue. Bulgarian

KEYWORDS

psychological state;
emotions; lockdown;
adaptive perfectionism

students had higher values of adaptive perfectionism (self-organization, personal demands) and lower values of maladaptive perfectionism (doubts, fears, criticism, and parental expectations). A positive association was found between adaptive perfectionism by athletes and energy, as well as non-adaptive perfectionism and states of anger, depression, and tension. Significant positive correlations were found between maladaptive perfectionism and the studied mental states-Tension ($r = .418^{**}$), Depression ($r = .241^{**}$), Anger ($r = .354^{**}$), Fatigue ($r = .232^{**}$) and negative with Vigor ($r = -.164^*$). The study allows us to better understand the predictions of the athletes' psychological conditions.

Experience in elite sports scientific and practical work. past, present and future

Victoria Georgiadi and Alexandra Banayan

Federal state budget institution Saint-Petersburg scientific-research institute for physical culture

ABSTRACT

Since 1973, scientists have developed new methods of psychological and pedagogical coaching of Olympic Games athletes. The most relevant studies related to athletes' mental readiness based on their individual typological and personal characteristics. The developed approach made it possible to single out the main directions of psychodiagnostics: 1) determination of the psychological criteria – athlete's competition readiness and special training, 2) definition of the athletes' activity as a functional indicator, 3) determination of emotional stress level. This systemic approach has socio-psychological, personal and individual characteristics, sports activity requirements and conditions (Y.Khanin, J. Kiselev). Since 1979, based on correlation between mental state and sports performance, psychological support in sport training has been mainly focused on psychodiagnostics, psycho prevention, and psycho regulation. In 1986, a methodology was developed which allowed assessing athlete's pre-competitive psychological readiness. Since the 90s, Pavel Bundzen, Professor, M.D., created unified automated computer diagnostics enabling to assess motor readiness and mental state of an athlete. As a result of active joint research work with the Scandinavian International University (President, Professor Lars-Eric Uneståhl, Örebro, Sweden), a system of mental training was developed to strengthen health and sports success. Comprehensive psychophysiological, neurobiochemical, and psychological studies have made it possible to obtain unique data on the mental relaxation brain mechanism, stress limiting, and immunomodulatory effects of mental training. The fundamentals of mental training for the Olympic reserve and highly qualified athletes have been developed. Researchers have developed a methodological approach to increasing athletes' competitive reliability (diagnostics, correction, and sports success prediction). Korotkov K.G., D. Sc. created a method of Gas Discharge

KEYWORDS

psychodiagnostics; scientific heritage; GDV; sports success prediction; individual approach

Visualization Technique in the 2000s. Investigations of diagnostics of the basic NSP system according to the method developed by Professor, Dr. Ilyin E.P. by device "PROGNOZ" (created by Drozdovskiy A.K., Ph.D.) allowed to determine the athlete natural psychological characteristics, abilities and predisposition to certain sports and to create model characteristics in various sports. Since 2016, the development of the scientific heritage continues in the sports psychology and psychophysiology laboratory. Experimental developments in athlete psycho-emotional condition control and correction methods is carried out in accordance with the sports training periodization. Model psychological characteristics development to identify sports gifted children in various sports. Mental training modernization and practical use to increase the athlete training and competitive adaptive abilities. Assessing psychological readiness criteria and psychological training structure for Olympic, Paralympic, Deaflympics teams.

Psychological support for athletes during pandemic period

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ABSTRACT

Introduction. The COVID-19 pandemic has significantly influenced the 2020-2021 global sports calendar, with many ongoing and planned sporting events postponed or canceled. Training, social interactions, and the entire lifestyles of athletes have been transformed. Authors developed the structure and the content of psychological support for athletes during the pandemic by summarizing their research results and colleagues experience. This made it possible to form a psychological readiness for a person's successful self-realization in sports. Psychological support for athletes, undergone stressful effects, high emotional influences and adverse pandemic factors consists in rapid individual focused sustain and the direction of practical work. That is especially topical for the athletes' effective preparation for important competitions and achieving excellence in performance. The purpose of the study was study of methods of psychological support for athletes during a pandemic. Methods and design of the study. For practical work, we relied on P. Lewin's (1994, 1997) method of trauma psychotherapy, which allows us to work through traumatic experiences more holistically and completely. SIBAM is a system for organizing experience and a way of organizing reactions to trauma (sensation, image, behavior, affect, meaning). In order to work through the main problems with the athletes in-depth, a study was conducted to determine the level and features of self-regulation, the degree of expression of

KEYWORDS

psychological support; pandemic; somatic trauma technique; self-regulation; athletes

personal anxiety, feelings of connectedness-predictability of life, and psychological well-being. Were used to assess the mental state features of the athletes: "Clinical questionnaire for identification and assessment of neurotic states" (Yakhin-Mendelevich test); Dembo-Rubinstein self-assessment (modified by A.M. Prikhozhan); Self-regulation style questionnaire (V.Morosanova); K. Riff Psychological Well-being Scale questionnaire (adapted by T.D. Shevelenkova, P.P. Fesenko); A. Antonovsky's Sense of Connectedness technique and clinical interview. Results and discussion. In order to curb the possible consequences of an unfavorable mental state, the athletes were given the task of listening to audio sessions of the Autotraining Programme (AT), developed by Professor G.D. Gorbunov, on a daily basis. During the whole period of the athletes' self-training sessions, an online psychologist provided psychological support. Conclusion. The somatic trauma technique is very effective in dealing with traumatic experiences and their aftermath in athletes, which has been confirmed by the final psychodiagnostic testing. The somatic experience technique can be organically applied in the work of rehabilitation services during the pandemic and when changes in key areas of the athletes' lives are occurring at a tremendous rate in the world.

The importance of a psychophysiological sport and exercise psychology - an introduction

Markus Raab

German Sport University Cologne

ABSTRACT

Recently psychophysiological work has become a routine standard in sport and exercise psychology as evident in studies, diagnostics and interventions. A special issue of the psychophysiology of action from 2018 did received some 85.000 views of 15 papers summarizing the need to build a foundation of scientific rigor when applying psychophysiological perspectives to sport and exercise psychology (Hoffmann et al., 2018). The goal of this symposium is to provide a perspective to spark a debate across theoretical borders and integration of different disciplines via psychophysiology and its consequences for sport and exercise psychology. We believe in order to enhance our research field it is important to bring together information from different disciplines and consider theoretical, methodological and practical challenges. In the introduction by Markus Raab the needs for a psychophysiological approach in sport and exercise psychology will be argued for with the title of his talk: The Importance of a Psychophysiological Sport and Exercise Psychology - an Introduction. This will be followed by work from Urska Dobersek and col-leagues based on a review from 2021 on neural proficiency in optimal performance in self-paced sports adding to our main goal of symposium. The title of the talk will be Psychophysiological sport and exercise psychology: Reflections

KEYWORDS

Psychophysiology;
Neuroscience; Action

and perspectives for re-search and practice. Next Selinia di Fronso and colleagues will provide empirical evidence from the Behavioral Imaging and Neural Dynamics (BIND) Center in Italy. Her talk will be titled as: On Individual Alpha Peak Frequency to Measure Fatigue and Recovery in An Endurance Cycling Task. Next Sylvain Laborde and colleagues from the Performance Psychology Lab in Germany will provide evidence on slow-paced breathing effects. The title of his presentation is: Psychophysiological effects of slow-paced breathing realized with or without heart rate variability biofeedback. Finally, Maurizio Bertollo will serve as a discussant to bring the theoretical, empirical and methodological overviews into a unified set of challenges we need to consider for research and practice in sport and exercise psychology. This will serve as a final round of reflections and perspectives for research and practice.

Hoffmann, S., Borges, U., Bröker, L., Laborde, S. J. P., Liepelt, R., Lobinger, B. H., Löffler, J., Musculus, L., & Raab, M. (2018). The Psychophysiology of Action: A Multidisciplinary Endeavor for Integrating Action and Cognition. *Frontiers in Psychology*, 9, [1423].

A meta-analytical review of optimal performance in self-paced sports: a psychophysiological perspective

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ABSTRACT

Expert athletes perform consistently at optimal levels even under challenging conditions (Ericsson, 2007). Noteworthy, scholars have explained optimal performance in light of neural efficiency hypothesis (or psychomotor hypothesis) which suggests that experts' brains work smartly by recruiting the spatiotemporal areas needed to perform the task at hand (Del Percio et al., 2008; Haier et al., 1988; Hatfield et al., 2020; Holmes & Wright 2017). Over the years of deliberate practice, experts learn to recruit only neural networks needed to optimally perform a given task (Ericsson, 2007). Another proposed explanation is transient hypofrontality hypothesis which suggests that optimal performance is an altered state of consciousness that is only possible due to the temporary shutdown of conscious and deliberate thinking, as manifested by a temporary frontal hypofunction. (Dietrich, 2003; 2006). Recently, researchers have proposed neural proficiency hypothesis which suggests that athletes purposefully recruit neural networks that allow them to perceive the information needed to perform task successfully and silence the parts of the brain that are not needed for the task at hand (Bertollo et al. 2016, 2020). To examine which of these hypotheses better explain optimal performance in sports, we conducted a meta-analysis. Eight studies met the inclusion/exclusion criteria, representing 153 participants and eight different sports. We found that (a) optimal performance is

KEYWORDS

Psychophysiology; EEG; Cycling

characterized by increased alpha and theta across the cortex; (b) during optimal performance the frontal lobe is more relaxed and less busy in comparison to the other brain lobes; (c) for the same given task, experts' brains are more relaxed and less busy than novices' brains. Our findings suggest that neural efficiency, neural proficiency, and transient hypofrontality are likely complementary (not separate) neural mechanisms that underpin optimal performance. In practice, neurofeedback training should teach athletes how to amplify and suppress their alpha and theta activity across the brain during all movement stages (see meta-analysis: The role of neural efficiency, transient hypofrontality and neural proficiency in optimal performance in self-paced sports: a meta-analytic review by Filho, Dobersek, & Husselman, 2021). Filho, E., Dobersek, U. & Husselman, TA. (2021). The role of neural efficiency, transient hypofrontality and neural proficiency in optimal performance in self-paced sports: a meta-analytic review. *Experimental Brain Research* <https://doi.org/10.1007/s00221-021-06078-9>

Individual alpha peak frequency to measure fatigue and recovery in an endurance cycling task

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ABSTRACT

Among the measures developed to quantify the content of EEG signals within the alpha band and to monitor how they change across experimental conditions, the individual alpha peak frequency (iAPF) has gained increasing attention (e.g., Cheron et al., 2016) and has been employed as a neural marker of stressful conditions. The aim of this study was to test the occurrence of an iAPF shift associated with an exhaustive task that would confirm the usefulness of this measure to assess physical fatigue – a critical parameter for the prevention of overtraining and/or injuries in athletes and for the modulation of the individual training load. We recruited 13 athletes who performed an endurance cycling paradigm comprising five phases: baseline, pre-cycling, endurance cycling, active recovery, and passive recovery. Pre-cycling, active and passive recovery phases were analysed. Significant differences between the iAPF calculated for the diverse paradigm phases were observed ($p < 0.001$, $\eta^2 = 0.609$). In particular, post hoc pair-wise comparisons showed significant differences between pre-cycling and active recovery ($p = 0.030$, $d = 0.629$), between pre-cycling and passive recovery ($p < 0.001$, $d = 0.819$), and between active and passive recovery ($p = 0.037$, $d = 0.232$). Specifically, an increase of the average iAPF was evident and corresponded to a constant fatigue-induced shift of the iAPF toward higher frequencies. Our results corroborate previous findings where iAPF significantly increased after an exhaustive exercise (Gutmann et al., 2015).

KEYWORDS

Alpha band; arousal; EEG; stress-recovery balance

Since iAPF is also considered an index of speed of information processing and arousal, our results may also confirm that an acute bout of exhaustive endurance exercise can activate brain mechanisms supporting information processing and alertness during performance (Lambourne and Tomporowski, 2010). Moreover, the physically demanding nature of the endurance cycling task could explain the discrepancy between our findings and those obtained in a study on ice-hockey shooting performance (Christie et al., 2017), where the iAPF was found to be invariant and was related to latent cognitive general factors (Grandy et al., 2013). Consequently, we conclude that the iAPF shifts observed in our investigation are induced by fatigue, confirming the usefulness of this measure in the stress-recovery balance assessment (Bertollo et al., 2020).

Psychophysiological effects of slow-paced breathing realized with or without heart rate variability biofeedback

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ABSTRACT

Heart rate variability (HRV) biofeedback, literally meaning providing an individual with a display of his/her live HRV signal, became by oversimplification a term used to refer to slow-paced breathing (SPB) performed while visualizing a heart rate, a HRV, and/or sometimes a respiration signal. HRV reflects the variation in the time interval between successive heartbeats. In the past two decades, and thanks in particular to the seminal work of Lehrer, Vaschillo and colleagues, the use of HRV biofeedback greatly spread in psychology, medicine, and other disciplines, so that now interventions have been designed and proved successful to serve as an adjunct treatment for many psychological and medical conditions. However, despite the growing use of HRV biofeedback interventions, questions remain regarding the underlying mechanisms of this technique. In particular, the impact of displaying the heart rate signal as biofeedback while performing SPB has not yet been disentangled from the effects of SPB itself, and the current study aimed to address this issue. 112 participants took part in this study. They were involved in a within-subject design, in which they realized in a counterbalanced order SPB at 6 cycles per minute, either with (SPB-HRVB) or without (SPB-NoHRVB) HRV biofeedback, with a rest period before (PRE) and after (POST). Psychophysiological parameters assessed involved emotional (valence, arousal, control) and perceived stress intensity self-report variables, and the log of the root mean square of the successive differences (RMSSD) as a physiological variable. For all dependent variables only a main effect of time was found, while no condition nor

KEYWORDS

RMSSD; cardiac coherence; deep breathing; abdominal breathing; diaphragmatic breathing

time x condition effect was found. Results showed that, in comparison to PRE and POST, both SPB-HRVB and SPB-NoHRVB conditions resulted in a significantly more negative emotional valence, lower emotional arousal, higher emotional control, and higher log RMSSD. Perceived stress intensity was found to be significantly lower in both conditions compared to PRE, but was not significantly different from POST. To sum up, this study showed that the positive psychophysiological effects of SPB realized with HRV biofeedback (i.e., displaying the heart rate signal) as monitoring system did not differ from those of SPB realized without HRV biofeedback, when considering a 5min SPB exercise. Future research may investigate psychophysiological differences between SPB-HRVB and SPB-NoHRVB on different time frames (e.g., long-term interventions), and in response to diverse psychophysiological stressors.

American psychological association division 47 (society for sport, exercise, & performance psychology): initiatives and contributions to the field

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University of Denver

ABSTRACT

The American Psychological Association (APA) Division 47: Society for Sport, Exercise, & Performance Psychology, founded in 1986, is a professional organization with the mission of engaging members involved in the science and practice of sport, exercise, and performance psychology. The division develops, promotes, and disseminates information to professionals and the public related to: (a) standards for competent and ethical practice, (b) models of graduate and postdoctoral training, and (c) scientific knowledge that informs and guides practice. The division has approximately 900 members, comprised of professional members and professional, student, and international affiliates (those who are members of the division, but not the larger APA). The division developed a proficiency in sport psychology, which recognizes specialization in sport psychology as a postgraduate specialization after a doctoral degree in one of the primary areas of psychology. The proficiency encompasses training in psychological skills of athletes, the well-being of athletes, the systemic issues associated with sports organizations, and in developmental and social aspects of sports participation. In this symposium, several officers of the division will present and discuss current and future initiatives of various aspects of the division including its two sections (Running Psychologists [Section 1] and Performance Psychology [Section 2]). The discussant, a member of the Presidential Trio, will summarize contributions of the division to the fields of sport, exercise, and performance psychology and future directions of the division. For a number of years, the division has been working on Professional

KEYWORDS

professional organization;
psychology; sport; exercise;
performance

Practice Guidelines (PPGs) for sport psychology. The division has also developed a mentorship program for early career professionals and is working on a public education document about the training and competencies of various sport psychology-related practitioners. Finally, the division is committed to diversity and inclusion among the leadership, membership, and initiatives we are engaged in.

The society for sport, exercise, & performance psychology: current and future initiatives in a post-pandemic professional community

Brandonn Harris

Georgia Southern University

ABSTRACT

Fundamental changes to the provision of sport, exercise, and performance psychology services have taken place globally resulting from the COVID-19 pandemic. As a result, stakeholders within our profession across the world have been impacted including sport, exercise, and performance psychology professionals, students, clients, and training programs. Interestingly, nationally- and internationally-based sport psychology organizations across the world may have also experienced a shift in their support, guidance, and contributions to our professional communities as a result of the pandemic in some cases. For APA Division 47: The Society for Sport, Exercise, & Performance Psychology, a reflection of our pre-pandemic initiatives as well as our more recent undertakings have been tested and fortified as a result of COVID. Thus, this presentation will share some of the pre- and anticipated post-pandemic activities and ongoing initiatives of Division 47's contributions to the national and international sport, exercise, and performance psychology community. Attention will be given to how these have, in the Division's view, become that much more critical to the advancement of our field in a number of areas. Of particular interest includes the Division's focus on the development of our Professional Practice Guidelines to support the provision of services both currently and post-pandemic, and the focus on diversity and inclusion as a permanent component of our efforts to those marginalized members of the sport, exercise, and performance communities. Additionally, we will share our work geared towards the increased engagement and mentorship of students and early career professionals given the diversity of training programs and professional activities that our student and professional members are engaged in. Finally, we will present an initiative to educate the public about the various training pathways and credentials for practitioners in fields related to sport psychology.

KEYWORDS

professional issues;
mentorship; diversity;
professional organization

APA division 47, section 1 - running psychologists & exercise psychology

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ABSTRACT

Exercise, such as physical activity that is planned, structured, and repetitive and builds or maintains physical health and fitness, plays a vital role in mental health and wellbeing. Increasingly, researchers and clinicians have shown interest in exploring the relationship between physical and mental health. Numerous literature reviews and findings suggest that exercise may decrease symptoms of depression and anxiety as well as enhance mood and bolster psychological wellbeing (Searle et al., 2011; Weinberg & Gould, 2011). Thus, exercise may serve a preventative function against mental health problems and act as treatment or strengthen outcomes when used in conjunction with therapy and psychotropic medications (Callaghan, 2004; Crowley, 2015). The goal of exercise psychology is to understand and enhance thoughts, feelings, and behaviors related to planned and repetitive bodily movement used to improve physical fitness and health. Furthermore, the field of exercise psychology exists to promote the benefits of exercise, and clinicians who incorporate exercise in treatment may examine exercise beliefs and motivation, address barriers, build self-efficacy, identify strategies to improve adherence, and promote sustainable lifestyle change (Weinberg & Gould, 2011). The Running Psychologists (APA Division 47, Section 1), founded in 1987 by Ray Fowler, former President, seek to promote exercise, such as running, among psychologists and in the community, due to the significant role of exercise in wellbeing. The intent of this Section is to encourage and advance teaching, research, and service around the psychology of exercise. The purpose of this presentation is to discuss the following initiatives of Running Psychologists: to educate and serve the public, connect likeminded professionals through Ray's Race, and remind practitioners about the importance of physical health, specifically the role of exercise in wellbeing. The presenter will describe current research findings in exercise psychology that inform clinical practice. The benefits and challenges including ethical dilemmas of prescribing exercise or utilizing exercise in therapy (Clearing-Sky, 1988; Hays, 2004; Pedersen & Saltin, 2006) will be examined. Lastly, implications for future research and clinical practice in exercise psychology within the greater field of sport, exercise, and performance psychology will be discussed (Lox, Ginis, & Petruzzello, 2006). Ultimately, psychologists and mental health practitioners should be familiar with recommendations for exercise, apply theories of behavior (e.g., Bandura, 2005; Deci & Ryan, 1985, 2000; Hagger & Chatziasarantis, 2007, 2008), determine competence around exercise promotion, and adopt a model for addressing exercise with patients including how exercise may fit into treatment.

KEYWORDS

exercise; wellbeing; running; psychologists

APA division 47, section 2 - performance psychology

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ABSTRACT

Performance can be defined as a moment in time when an individual must enact knowledge, skills, or abilities (KSAs) knowing that there are consequences, either positive or negative (Hays & Brown, 2004). Raymond Fowler stated, "we all have performance issues" (Fowler, 2009, p. ix). Performance Psychology is a field in which the goal is to help performers consistently perform in the upper range of their abilities (Portenga, Aoyagi, & Cohen, 2017). There are several domains that could fall under the umbrella of performance psychology, including: sport, performing arts, business, and high risk occupations (such as military, firefighting, police, and surgeons). There are significant mental skills, cognitive factors, and challenges that are associated with the field of high-pressure performance. To address the processes that many performers need for successful experiences and performance outcomes, preparation is critical. To support successful performance outcomes, as well as the extensive research, theoretical foundations, and practice of performance psychology, Section 2 (Performance Psychology) of the American Psychological Association (APA) Division 47 was born. The late Dr. Kate Hays, a former president of APA Division 47 (Society for Sport, Exercise, & Performance Psychology) was the founder of Section 2 (Performance Psychology). She established this section to inform the work of psychologists, counselors, consultants, and other sport and performance psychology professionals and mental health advocates to address key performance areas such as mental health attributes for peak performance, performance challenges, performance related consequences, and consulting within a sport or performance system (Hays, 2009). APA Division 47 Section 2 supports the community of those who are interested in professional practice, teaching, research, and consultation related to the psychological aspects of optimal performance with performers including athletes, performing artists, corporate/business leaders, military, and other high-risk or high performing occupations. The purpose of this presentation is to provide the audience with a framework that defines and describes the field of performance psychology, helps to increase awareness and understanding regarding the role of performance psychologists in various performance contexts, and discuss some of the current and future initiatives of APA Division 47 Section 2.

KEYWORDS

performance; psychology;
performing arts; business;
high risk occupations

Sport and exercise psychology in Taiwan: past, current, and future, from SSEPT perspectives

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ABSTRACT

Sport and Exercise Psychology in Taiwan is a relatively newborn sub-discipline. The Society for Sport and Exercise Psychology of Taiwan (SSEPT), Taiwan's first research foundation for Sport and Exercise Psychology, which was established in 2001, and has energetically advanced the Sport and Exercise Psychology academic discipline and its research in Taiwan. The purpose of this upcoming partnership symposium is for promoting relevant ways of enhancing Sport and Exercise Psychology research and academic development in Taiwan, from multiple perspectives. Specifically, the symposium's first presenter, Professor Yu-Kai Chang, will deliver an overview of the SSEPT. The second presentation, by Professor Tsung-Min Hung, will address developments, trends, and issues of Sport and Exercise Psychology research in Taiwan. The third presentation, by Professor Frank Jing-Horng Lu, will concern the linkage between the SSEPT and international Sport Psychology organizations. The fourth presentation, by Professor Chung-Ju Huang, will target the development and research perspectives of the official SSEPT journal. The last presentation, by Professor Yen-Hui Chuang, will examine Sport and Psychology issues from a sports counseling perspective.

KEYWORDS

Exercise psychology; Sport psychology; Taiwan

The linkage between society of sport and exercise psychology for Taiwan (SSEPT) and international sport psychology organizations

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ABSTRACT

In the past 2 decades, specifically since the establishment of the Society of Sport and Exercise Psychology for Taiwan (SSEPT) in 2000, it develops many links between Taiwan and international sport psychology organizations. The formulation of these links starts from individual sport psychology researcher's interest in a certain organization. However, along with the development of the SSEPT, Taiwan actively participates in international sport psychology organizations and their conferences. Each year, Taiwanese sport psychology researchers participate in annual international sport psychology conferences such as the Association of Applied Sport Psychology (AASP), North American Society for the Psychology of Sport and Physical Activity

KEYWORDS

sport psychology; Taiwan; international relations; academic development

(NASPSPA), European College of Sport Science (ECSS), and American College of Sports Medicine (ACSM). Taiwanese sport psychology researchers also regularly participate in quadrennial conferences such as congresses of the International Society of Sport Psychology (ISSP), the European Society of Sport Psychology (FEPSAC), and the Asian South-Pacific Association of Sport and Exercise Psychology (ASPASP). To facilitate the links between SSEPT and international sport psychology-related bodies, we actively join the meetings or conferences of Sport Psychology Council (SPC), Asian Society of Kinesiology (ASK), Arabian Society of Sport Psychology, and Sport Psychology Association of India (SPAI). Further, many international sport psychology researchers have been invited to Taiwan either for short-term research projects, academic visits, or conference participation. Thus, by using various and intensive interchanges, Taiwanese sport psychology researchers not only bring new knowledge of sport psychology to domestic students, interact with many renowned international scholars, but also contribute their professional experiences to international sport psychology organizations such as ISSP, ASPASP, ASK, and their academic journals as editorial board members, reviewers, and authors. These interchanges are multi-aspects, positive, and enthusiastic.

The development and perspectives of the official SSEPT journal

Chung-Ju Huang

University of Taipei

ABSTRACT

He official journal of the SSEPT, Bulletin of Sport and Exercise Psychology of Taiwan, published its first issue in 2001. The journal is a peer-reviewed publication designed to stimulate and communicate research theory in all areas of sport and exercise psychology and motor behaviors. The journal emphasizes original research reports and comprehensive reviews that advance our understanding of human behavior as it relates to sport and exercise by employing either qualitative or quantitative methods. The journal publishes 3 issues per year now. Over the past two decades, the journal has published over 200 innovative research paper and contributed to improve the quality of research and professional practice in sport psychology and motor behaviors. Notably, this high-quality journal has been ranked as the LEVEL 1 in the database of Taiwan Social Sciences Citation Index. The journal's past and current Editors and Editorial Board also have close relationships with international journals including Journal of Sport and Exercise Psychology, Psychology of Sport and Exercise, International Journal of Sport and Exercise Psychology and so on. These connections provide opportunities for Taiwan scholars to devote their expertise to international communities and then to bring international perspectives back to Taiwan. In the future, the journal will continue to be a platform for individuals who are

KEYWORDS

sport psychology journal;
Taiwan; social science
citation index

interested in theory, research, and professional practice in the disciplines of sport psychology and motor behaviors throughout the island. This journal also expects to extend its contributions to international communities in terms of inviting researchers and scholars worldwide to submit their work for publication, working for being indexed in international citation databases, and presenting journal website in English. We sincerely hope that our journal will be an international forum for scholarly reports in the psychology of sport and exercise and motor behaviors.

Sport and exercise psychology research in the 21st century in Taiwan

Tsung-Min Hung

National Taiwan Normal University

ABSTRACT

Research in sport and exercise psychology (SEP) in Taiwan has witnessed an exponential growth since 2000. The number of publications, both in locally and internationally indexed journals, has increased significantly in the last ten years. A similar trend has also been observed in funded research grants and international scholarly cooperation. In addition to this quantitative growth, improvement in research quality has been even more significant. This improvement has been manifested by adopting more diversified approaches, cognitive neuroscience and epidemiological approaches in particular, which go beyond the traditional social cognitive approach, in order to provide different levels of analysis for SEP research. The increased number of studies employing experimental and longitudinal design for empirical studies, as well as quantitative research synthesis methods, such as meta-analysis, for stronger causal inference, have also added to the ammunition for improving the quality of SEP research in Taiwan. This healthy development could be attributed, but not limited, to the following reasons. First, the establishment of the Society for Sport and Exercise Psychology of Taiwan (SSEPT) in 2000. Second, the launching of the Bulletin of Sport and Exercise Psychology of Taiwan, the official journal of the SSEPT, in 2001. Third, the recruitment of more and newer faculties, with rigorous doctorate training in various areas of SEP, from prestigious local universities, and universities in the UK and the US. Fourth, the rapid increase of graduate programs entailing a growing number of graduate students with specializations in SEP. Fifth, the increasing funding support from the Ministry of Science and Technology. Sixth, the increased interactions with active researchers around the world, both in inviting renowned scholars to visit Taiwan, and research faculty actively participating in international conferences organized by SEP flagship societies, such as the International Society of Sport Psychology (ISSP), the North American Society of Psychology for Sport and Physical Activity (NASPSA), the European Federation of Sport Psychology (FEPSAC), and the Asian-South Pacific Association of Sport

KEYWORDS

academic development;
research approach; Taiwan

Psychology (ASPASP). Seventh, the significant faculty involvement in international organizations, such as the ISSP, NASPSPA, and ASPASP, and faculty publications in high impact journals, such as the International Journal of Sport and Exercise Psychology, Psychology of Sport and Exercise, and the Journal of Sport and Exercise Psychology. Among these factors, research-oriented faculties are no doubt the major impetus for the ascending and cutting edge SEP research in Taiwan, and strategies for increasing the number of faculty position for SEP should be prioritized.

The past, present and future of sports counseling in Taiwan

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ABSTRACT

As Taiwanese athletes have gained more opportunities for international competitive sports arena, many of them, have had chances to win medals, were defeated by their negative mentalities at the last minute. Around the year of 2000, the National Sports Training Center began to seek help from Sports Psychology professors from universities. At the earliest, there were 7 Sports Psychology professors, who, while combining related sport psychology theories with counseling practices, provided long-term assistance to national sports teams. With the accumulation of their service reputations and the increasing demand for sports psychology assistance from athletes, the Society for Sport & Exercise Psychology of Taiwan (SSEPT) started to arrange training programs. Graduate students specializing in Sports Psychology would thereby be certified as sports counselors, after attending 100 hours of lectures, passing a qualifying examination, and completing a 150-hour practicum, under supervision of the senior sports counselors. These sports counseling training programs were provided by a joint force of senior teachers from the SSEPT, industry professionals, and sports counselors certified by the SSEPT. The training program consisted of 5 categories and 12 academic courses: 1. General- The basic concepts of psychological counseling and intervention for athletes, counseling practice and ethics for sport counselors, and sports psychological assessment; 2. Psychological skill training; 3. Basic counseling techniques- helping skills and basic counseling techniques, group counseling, and individual counseling; 4. Sports psychological intervention practice- sports psychological intervention processes and planning, case studies, and experience sharing; 5. Other important topics- athletes' mental distress and intervention, motor learning and teaching practice, and cultural competence and gender issues in sports counseling. In the past two decades, sports counselors in Taiwan have provided services to athletes of various teams, including the national teams of the Asian Games, and the Olympic Games, professional teams, and sports teams at all levels. In the future, the SSEPT will continue to cultivate more sports counselors, put

KEYWORDS

sports counseling; sports counselor; sport psychology; mental coach

more efforts into promoting sports counseling, and vigorously engage in efforts for acquiring more service resources and opportunities from the public sectors. The SSEPT will also encourage certified counselors to set up personal studios, and establish reasonable consultation fees for individual and team services. Last but not the least, the SSEPT will build up local human resources networks and provide psychological training courses for strength and conditioning coaches and athletic trainers, and by doing so, seek to expand full-time job opportunities for sports counseling professionals.

General Symposia

Sport environments matter: beyond the athletic talent development environment

Louise Kamuk Storm

University of Southern Denmark

ABSTRACT

Research in athletic talent development environments initiated a shift of attention from the individual athlete to the broader environment in which athletes develop. New developments have shown that the holistic ecological approach holds merit beyond the talent development context and is applicable also in contexts such as dual career and underserved communities. With this symposium, we aim to provide the current status and recent developments of a context-driven and holistic ecological approach in sport psychology research and practice. How and why some environments are better than others in facilitating athlete development and what future steps are for research and sport psychology practice in creating and maintaining sustainable athletic environments will be discussed. With a collection of studies conducted in varying cultures and countries, this symposium enables us to compare and contrast results across different sport development systems to stimulate contextual awareness and reflexivity among researchers and practitioners working in athletes' environments. The symposium illustrates that successful environments are similar and different, and contextual awareness and reflexivity among practitioners working in athletes' environments will benefit performance, development, well-being and mental health among the athletes. With an introductory presentation (abstract 1), status of the holistic ecological approach and talent development environment research is provided. Subsequently, three case examples of varying sports environments (abstract 2-4) illustrate new developments. First, a qualitative case investigation (abstract 2) of a successful community college basketball program located within an underserved American urban community illustrates how the socioeconomic condition of the surrounding environment impact on an athletic talent development environment. Second, a mixed method multiple case study

KEYWORDS

dual career; athlete development; culture; context-driven approach; holistic ecological approach

(abstract 3) of school-based talent development environments in Australian rugby league illuminates how key relationships and cultural processes of effective talent development environments influence actual and perceived change within the players. Third, shifting from talent development to the context of dual career, a case of a Scandinavian university-based dual career development environment (abstract 4) illustrates how a well-coordinated environment influence athletes' transition experience. Finally, to illustrate the value of comparing multiple countries, contrasting across sports and systems determine similarities as well as key differences, the symposium is closed with a discussion of (1) essential features identified so far (i.e., how and why some environments are better than others in facilitating athlete development) and (2) lessons learned when adopting context-driven and holistic ecological approaches. New developments and practical implications are summarized. We consider this symposium a step forward in the endeavour of understanding how and why sport environments matter.

The evolving field of athletic talent development environment research: status and new developments

Kristoffer Henriksen

University of Southern Denmark

ABSTRACT

Research on athletic talent has evolved from talent detection to talent development with both perspectives focusing on the individual athlete. This individual focus has been mirrored in the work of coaches and sport psychology practitioners who have primarily focused on athletes' sport specific and psychological skills. In contrast, the holistic ecological approach (HEA) to talent development acknowledges the role of the overall environment and mirrors the complexity of talent development in the real world. The HEA highlights two interconnected ways of analyzing athletic talent development environments. First, there is a focus on the structure of the environment, particularly the roles and cooperation of key persons. Second, there is a focus on the organizational culture of the team. Exploratory case studies of successful and less successful environments in different sports have shown that while each environment is unique, they also share a number of features, including: proximal role models; an integration of efforts among the different agents (family, coaches, management etc.); inclusive training groups; a focus on long-term development, and a "strong and coherent" organizational culture. While this research has its roots in Scandinavia, studies from a broader range of contexts have emerged. In recent years, the HEA has branched out and been used in the study new areas. As an example, a group of European researchers have developed the framework to accommodate the study of dual career development environments across Europe. Another example is the study of a basketball talent development environment in an

KEYWORDS

sports environment; talent development; case study; ecological psychology; organisational culture

underserved community in the USA, which demonstrated how such an environment has unique challenges and opportunities compared with more affluent environments. On the environment macro level, a third example is studies of successful collaboration between national sport federations, local authorities and clubs to promote local talent development. From an applied perspective, the HEA calls for sport psychologist to be contextually sensitive and aim to develop not the mental skills of individual athletes but also integrated and coherent environments. Recently, the HEA has provided a basis for designing contextualized interventions to improve talent development environments in local clubs and all the way to national level policies. In the current presentation, I will provide a status on the talent development environment research and a taste of how the field is evolving.

“We are their last chance”: underserved athletic talent development in an american community college basketball environment

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^aUniversity of Southern Denmark; ^bHalmstad University

ABSTRACT

Guided by the holistic ecological approach to athletic talent development (Henriksen et al., 2010), this case study was initiated in order to explore a successful community college basketball program located within an underserved American urban community to understand the specific challenges it faces and how it is successful in overcoming them. The notion of an underserved athletic talent development environment (UATDE) proposes that the sporting domain within the broader environment is disproportionately affected by the burdening socioeconomic factors of the surrounding community in which it is embedded. The concept suggests that two shared features link UATDEs together: (1) the center is typically occupied by psychosocially vulnerable athletes who require heightened attention upon their personal development, and (2) the coach as the primary driver for success must recognize and address this vulnerability before sport specific tasks become equally prioritized. Further, once an athlete leaves a UATDE to pursue their career in college or university, the scars or “invisible tattoos of trauma” (Parham, 2020) can, and do stay with them. Within this particular community college UATDE, we observe significant problems stemming from the surrounding environmental context in which it is embedded requiring the team to expend considerable resources fostering, nurturing, and supporting the psychosocial development of their vulnerable players. The support team understands the deeper purpose of their work, from the academic counselor who recognizes the community problems, the athletic trainer who views “sports as a way to

KEYWORDS

underserved community;
athlete development;
cultural sport psychology;
cultural leadership

become a better person,” and the head coach who feels the pressure ensuring his players receive a college education. Consequently, many factors must merge together to sustain the community college UATDE’s success, but none more important than the cultural leadership of the head coach and his contextualized understanding of the specific environment. Further, within this college community UATDE, we observe similar preconditions and processes witnessed in case studies of successful athletic talent development environments conducted in Europe and Canada. For instance, an established coach as a primary driver for success, overcoming financial barriers, creating a highly competitive environment, or utilizing volunteers for support are all identified in this particular community college UATDE. However, while operating as a high-level sporting environment creates notable similarities between this community college UATDE and ATDEs seen in current literature, what necessitates a differentiation is the degree to which barriers (i.e., manifesting as environmental preconditions) present problems in the sporting domain

Effective school-based talent development environments in rugby league: context strengths promoting individual change

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ABSTRACT

Acknowledging the inherent complexity of process and the number of contextual factors known to influence talent development beyond the individual, holistic ecological approaches have now highlighted shared and unique features of effective talent development environments (TDEs). Increasing understanding of the unique environments in which effective talent development occurs and the positive alignment of culturally specific processes and resources within these settings is now being promoted. The current research presents an overview of both context and processes in an exploration of three school-based elite TDEs within rugby league. The research seeks to further understand how TDE features, and practices can (in)directly influence perceived individual skill development that promote player progression within these unique programs. Extending attention to psycho-behavioral factors that assist players to make the most of afforded opportunities, the presentation moves beyond environment structure to evaluate the impact of TDE culture and process. A mixed methods approach consisting of focus groups and a longitudinal repeat measure questionnaire battery was applied to explore the three elite School based RL TDE’s. Focus groups explored perspectives on the rationale of TDE success with participants including coaches (n = 9), student players (n = 9) and ex-student players (n = 9). A two-year, four time point longitudinal examination of current student-players (n = 43)

KEYWORDS

athlete pathways; talent development; ecological approach; rugby league

perceptions and associated perceived individual skill development was determined by three validated instruments. Initial focus group findings confirmed strong coherence to effectiveness characteristics of TDE literature such as a whole person approach, strong support and high expectations. Unique opportunities in relation to intra-pathway integration of efforts and psychological skill development were also found. Secondly, a cross-lagged analysis of combined instruments data highlighted how preceding stable or enhancing TDE processes characterized by individual player understanding, support, and autonomy were associated with positive change in psych-behavioral outcomes, notably coping, self-monitoring and effort. However, over the same period TDE processes centered on managing training and competition demands within both the TDE and broader RL pathway challenged players taxing coping resources. Interview data provides practical coaching examples illustrating these perceived skill and environmental changes. The findings show the benefits of context driven approaches, highlighting how key relationships and cultural processes of effective TDEs influence actual and perceived change within the players. Several practical recommendations in relation to organizational culture, coaching practice, and the recognition of additional development needs (i.e., psychosocial skills) are provided to inform applied work to further optimize TDEs and enhance potential player transition to higher levels.

Facilitating student-athletes' university transition: a case study combining holistic ecological and developmental approaches

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ABSTRACT

Research into athletes' dual careers has been guided by two main approaches. The holistic developmental approach has increased our understanding of the demands student-athletes' face and the competences needed to balance their DC. The holistic ecological approach has shifted the attention to the developmental context and how DC development environments (DCDE) support or hinder student-athletes' development. So far, DCDEs and their functioning have been described and deemed effective based on general outcome measures (e.g., sport and academic achievements, dropout rate), but without a clear link to the student-athletes' actual demands and supportive needs. In this study we explored how a DCDE facilitated student-athletes' transition to, and first year adaptation at university level, by combining the holistic ecological and holistic developmental approaches and considering DC balance as a primary concern for DC support. A mixed-methods intrinsic case study was implemented to explore the complexity and uniqueness of a

KEYWORDS

Dual career balance; dual career development environment; holistic developmental approach; holistic ecological approach

specific bounded case, that is, a Scandinavian university-based DCDE and student-athletes' development within it. Inspired by the holistic ecological approach and the DC-environment success factors (DC-ESF) working model we explored the case using multiple sources of data. Semi-structured interviews were conducted to explore the transition experiences of nine student-athletes and the perspectives on the environment and support from four key support providers. This was complemented by documents analysis and a quantitative monitoring of the student-athletes' transition experiences (e.g., perceived DC balance, demands, and coping) throughout the educational year. Findings are presented in a joint display by merging the qualitative and quantitative data in an empirical version of the DC-ESF model. The student-athletes experienced a challenging transition with both athletic and non-athletic demands. The environment was well-coordinated with support providers centered around a mission of "a balanced and synchronized whole" and targeting empowerment of the whole person. There was convergence across sources of information with qualitative and quantitative data showing that the student-athletes improved in their sport and study, and in their ability to balance their DC while also developing their DC competences. By integrating the holistic ecological and the holistic developmental approaches we were able to situate the environment in the student-athletes' development and explicitly show the fit between student-athletes' needs (i.e., perceived demands) and support provided in the DCDE. Based on our finding we believe effective environments are those that work to optimize their structure and culture to meet student-athletes' needs, help student-athletes develop their DC competencies and maintain their DC balance.

Breathing techniques in sports - symposium

Sylvain Laborde

German Sport University Cologne

ABSTRACT

Breathing techniques of different frequencies and depths can be implemented by athletes in order to achieve specific mental and bodily states, such as relaxation or activation for optimal performance. This symposium aims to present an overview of breathing techniques used in the sport context, including slow-paced breathing (SPB), alternate nostril breathing, voluntary hyperventilation, fast-paced breathing (FPB), and breath-holding. A systematic review and meta-analysis will first be presented, before introducing an experimental study investigating the effects of an intervention combining psychoeducation to slow-paced breathing training. Each talk will also include a short practice unit to allow the audience to experience the diverse breathing techniques.

KEYWORDS

Slow-paced breathing; Fast-paced breathing; Breath-holding; Autonomic nervous system; Psychophysiology

Influence of slow-paced breathing and alternate nostril breathing on sport performance: a systematic review and meta-analysis

Nina Zammit, Maša Iskra and Sylvain Laborde

German Sport University Cologne

ABSTRACT

Breathing techniques of different frequencies and depths can be implemented by athletes in order to achieve specific mental and bodily states, such as relaxation or activation for optimal performance. These techniques include slow-paced breathing (SPB), alternate nostril breathing, voluntary hyperventilation, fast-paced breathing and breath-holding. Due to the potential benefits of these breathing techniques, we aim to realise a systematic review to investigate their effects on sports performance, while quantitatively summarising results through a meta-analysis. This talk will specifically focus on SPB and alternate nostril breathing. SPB is a breathing technique consisting of reducing respiratory frequency to fewer than 10 cycles per minute. The physiological benefits of SPB are based on its effects on increasing vagus nerve activity, which exerts a regulative effect on cardiac functioning. Previous research within the sport context has shown positive effects of SPB on physiological and psychological stress reactivity, as well as improved sports performance. Alternate nostril and uni-nostril breathing techniques rely on the usage and manipulation of the nasal cycle during breathing, aiming to achieve specific effects on the autonomic nervous system. Right nostril breathing has been linked to activation effects, increasing heart rate, blood pressure and oxygen consumption, while left nostril breathing induces opposing parasympathetic effects. Interventions with alternate nostril breathing report higher cognitive, tactile perception and swimming performance, as well as changes in heart rate variability and blood pressure. The present meta-analysis was pre-registered in PROSPERO (CRD42020200784) as part of a broader meta-analysis on breathing techniques. A systematic literature search was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses recommendations (PRISMA) in the databases of PubMed, Web of Science, ProQuest, PsycINFO, and Scopus. Studies were investigated for inclusion at title, abstract and full text levels, and data was extracted according to PICOS guidelines. Papers citing and cited by references reviewed at full text level were searched using Web of Science and Google Scholar. Sport performance outcomes were measured through physiological, physical, and psychological results. Through the database search 12,349 records were identified, and upon performing the citation network analysis 6,473 records were added. Out of 244 articles assessed for eligibility at full text, 109 were included in the data synthesis. 49 of these articles featured SPB and alternate nostril breathing interventions, and will be the focus of this talk. Data extraction is currently being realised, and final results will be presented at the conference.

KEYWORDS

Breathing techniques; Slow-paced breathing; Alternate nostril breathing; Sport performance; Autonomic nervous system

Influence of fast-paced breathing, hyperventilation, and breath-holding on sport performance: a systematic review and meta-analysis

Maša Iskra, Nina Zammit and Sylvain Laborde

German Sport University

ABSTRACT

Breathing techniques of different frequencies and depths can be implemented by athletes in order to achieve specific mental and bodily states, such as relaxation or activation for optimal performance. These techniques include slow-paced breathing, alternate nostril breathing, voluntary hyperventilation, fast-paced breathing (FPB), and breath-holding. Due to the potential benefits of these breathing techniques, we aim to realise a systematic review to investigate their effects on sports performance, while quantitatively summarising results through a meta-analysis. This talk will specifically focus on FPB, voluntary hyperventilation, and breath-holding. FPB is defined as a breathing technique with a respiratory frequency higher than 20 cycles/minute. It leads to the activation of the sympathetic nervous system by increasing the heart rate, oxygen consumption, and blood pressure. Similarly, voluntary hyperventilation may be realised by breathing faster and/or deeper than usual and is primarily characterised by the end-tidal partial CO₂ pressure below 35 mm/Hg. In contrast, breath-holding or apnea is defined as the voluntary cessation of breathing. It is associated with bradycardia, a compensatory mechanism resulting from an increased cardiac vagal activity, peripheral vasoconstriction, and elevated arterial blood pressure. Due to potential sport-related benefits, the present meta-analysis was conducted to investigate the effects of FPB, hyperventilation, and breath-holding on sports performance. The present meta-analysis was pre-registered in PROSPERO (CRD42020200784) as part of a broader meta-analysis on breathing techniques. It followed the PRISMA guidelines. A database search was performed in six databases and the identified studies were reviewed by title, abstract, and lastly by full-text. According to the eligibility criteria, the participants of the included studies were athletes of any expertise level. The interventions considered consisted of any breathing technique performed in absence of concomitant stimuli, which aimed to actively influence breathing. For the purpose of the present talk, only the interventions featuring FPB, voluntary hyperventilation, and breath-holding were included. The sport-related outcomes consisted of psychological, physiological, and physical variables. Through the database search 12,349 records were identified, and upon performing the citation network analysis 6,473 records were added. Out of 244 articles assessed for eligibility at full text, 109 were included in the data synthesis. 60 of these articles featured FPB, hyperventilation, and breath-holding interventions, and will be the focus of this talk. Data extraction is currently being realised, and final results will be presented at the conference.

KEYWORDS

Breathing techniques; Sport performance; Fast-paced breathing; Hyperventilation; Breath-holding

Psychoeducation and breathing training for stress reduction in student athletes

Emma Mosley^a, S. Duncan^a, K. Jones^a, H. Herklots^a, Emma Kavanagh^b and Sylvain Laborde^c

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ABSTRACT

Student athletes are exposed to many stressors across their university career and must juggle academic study and athletic pursuits. One simple and accessible relaxation technique is slow paced breathing (SPB). SPB is recognised as an effective stress management technique and can be used in high stress environments such as sport. Breathing at a specific pace (6 cycles per minute) triggers the resonance properties of the cardiovascular system and results in an increase in cardiac vagal activity (CVA), which may lead to reduced stress and enhanced wellbeing. Therefore, the aim of this study was to investigate the effectiveness of a psychoeducation and SPB intervention upon psychological stress, wellbeing and CVA in student athletes. Following institutional ethical approval, eight student athletes (Mage = 20.75, SD = 1.38, 3 female) competing at either national or international level were involved in the intervention. Athletes attended four sessions: 1. baseline screening 2. education workshop 3. post-intervention screening and 4. follow up focus group). In session one athletes completed measures of psychological distress (Physical Health Questionnaire-9, The Generalised Anxiety Disorder Assessment -7), overall wellbeing and knowledge of SPB. Athletes then completed a stress test involving stress induction using a script and a Stroop task, during which subjective stress and CVA was measured at rest, task and recovery. In session two athletes were educated about the benefits of SPB, trained to effectively use SPB, and practiced SPB in stressful conditions. After session two athletes practiced SPB daily for five minutes over a four-week period using a smart phone application, kept diaries of their progress and each week reported general wellbeing. After this period athletes returned for session three in which session one measures were repeated (one athlete did not complete these measures). Session four assessed the effectiveness of the intervention through a focus group. Preliminary analysis using paired samples t-tests found no significant differences in psychological distress pre ($M = 9.50$, $SD = 8.03$) to post ($M = 4.50$, $SD = 4.03$) intervention ($t(6) = 1.663$, $p = .14$) and no change in overall wellbeing from pre ($M = 69.14$, $SD = 16.98$) to post ($M = 76.14$, $SD = 13.65$) intervention ($t = -1.206$ (6), $p = .27$). Focus groups were thematically analysed, themes identified included using SPB for relaxation and sleep, SPB in performance, SPB use outside of sport. Athletes reported SPB increased bodily relaxation before going to sleep, nervousness reduced before games and helped to refocus during performance. The findings suggest SPB may be successfully delivered via smart phones if athletes are educated effectively and may influence subjective stress management, sleep and performance.

KEYWORDS

slow-paced breathing; student-athletes; heart rate variability; stress management; well-being

The psychology of elite esports athletes and coaches symposium

Remco Polman

Queensland University of Technology

ABSTRACT

Dear ISSP Congress Secretariat,

As there is limited guidance around how you would prefer an introductory speaker/ moderator to open the symposium, this document will outline how Professor Remco Polman will introduce and moderate this symposium.

The Psychology of Elite Esports Athletes and Coaches

Main theme: Sports Psychology

Sub-Theme: Performance

Speakers: Remco Polman, Dylan Poulus, Michael Trotter, Oliver Leis, and Matthew Watson

Proposed order of events:

- 1 Dylan Poulus will introduce Professor Polman
- 2 Professor Polman's introduction will cover several important esports industry and academic topics (10-15mins). Firstly, an overview of the esports' industry's growth as a competitive endeavour (or sport), including Olympic inclusion and large scale international tournaments. Secondly, how Esports organisations are supporting their players in a similar fashion to traditional sports organisations with a focus on coaches and sports psychologists. Thirdly, the increased academic interest in sports psychology research and the importance of sports psychology research to inform practice, increase performance, and improve the wellbeing of players. Finally, an introduction of the main themes, sub-themes, and speakers.
- 3 Mathew Watson (15 minutes): What is esports coaching? A qualitative examination of the behaviours and experiences of professional League of Legends coaches.
- 4 Oliver Leis (15 minutes): Perceived effects of sport psychological support in esports: A qualitative study.
- 5 Michael Trotter (15 minutes): An exploration of esports players use of psychological skills, self-regulation and access to social support compared to traditional athletes.
- 6 Dylan Poulus (15 minutes): The Perceived Determinants of Success in Professional Esports Athletes.
- 7 Audience Questions (Time remaining): Moderated by Professor Polman.

KEYWORDS

Esports; Competitive gaming; Sports psychology; Performance psychology

Social support, self-regulation, and psychological skill use in e-athletes

Michael Trotter^a, Paul Davis^b, Tristan Coutler^a, Dylan Poulus^c and Remco Polman^a

^aQueensland University of Technology; ^bUmea University; ^cSouthern Cross University

ABSTRACT

Despite its rapid growth in terms of players, spectators, and revenue, research on esports is still in its infancy. There has been some work on the psychology and health of esports athletes. Although, research in terms of factors influencing esports performance has been mainly qualitative in nature with small samples. A better understanding of what psychological factors are associated with esports athlete's performance and well-being is needed. To this end, it is useful to examine factors that have shown to be beneficial in terms of performance enhancement and well-being in traditional sport and which are potentially modifiable through interventions. Therefore, the purpose of this study was to explore the level of social support, self-regulation and use of psychological skills in esports athletes and how this might differ depending on the level of expertise. Using an online survey, we collected responses from 1444 athletes across 5 esports. Participants completed the Athletes Received Support Questionnaire (ASRQ; Freeman et al., 2014), Self-Regulation Questionnaire (SRQ; Brown, Miller & Lawendowski, 1999), competition section of the Test of Performance Strategies-2 (TOPS-2; Hardy et al., 2010) and information on their highest level of achievement in their primary esports. Findings showed that esports athletes scored lower on most factors on the ASRQ, SRQ and TOPS-2 compared to traditional sport samples. As expected, those esports athletes based in the top 10% of their esports showed higher levels of received social support, self-regulation and use of psychological strategies. In terms of social support, esports athletes scored lower than traditional athletes and esports athletes scored similarly on informational support. The current organisation structure of esports is a likely reason why esports athletes are scoring lower than traditional athletes on social support, self-regulation and use of psychological skills. Current esports environments, except for the high level (semi) professional teams, do not provide the opportunity for interaction with coaches or team members face to face. One possible explanation is that developing esports athletes play in solo-queue where there is little opportunity for the development of interpersonal relationships through which social support other than informational support can be developed. Esports environments currently also seem to have limited developmental opportunities to enhance self-regulation or psychological skills. Future research needs to explore how esports programs can be developed which will support athletes to receive more social support, develop self-regulatory skills and make use of psychological skills, leading to improved player performance and well-being.

KEYWORDS

Self-regulation; Competitive gaming; Psychological Skills; Social Support

The perceived determinants of success in professional esports athletes

Dylan Poulus^a, Tristan Coulter^b, Michael Trotter^b and Remco Polman^b

^aSouthern Cross University; ^bQueensland University of Technology

ABSTRACT

The last decade has seen a steady rise in esports related research in media studies, business, sports, and cognitive psychology (Reitman et al., 2019). Currently, the majority of esports psychology research has been guided by constructs developed in traditional sports research. For example, using questionnaires developed in traditional sport (Poulus et al., 2020) or exploring psychological constructs modelled in traditional sports (Himmelstein et al., 2017). The current study aimed to qualitatively investigate the perceived determinants of success in professional esports athletes. Thematic analysis was used to explore elite esports athletes' perceptions of success determinants, guided by the bioecological model (Bronfenbrenner & Morris, 2006). Semi-structured interviews were conducted with seven elite esports athletes. The interviews were used to investigate players' cognitions and emotions when playing well, training in elite esports, and working in esports teams. Deductive and inductive analyses were conducted to capture the core themes of success in esports within the bioecological model. When playing well, elite esports athletes experienced high levels of confidence, uninterrupted focus, and flow states. Elite esports athletes use mental strategies to help regulate their emotions and remain mindful in the presence of 'tilt'. Furthermore, breathing techniques and tactical breaks were used when players felt nervous or when trying to 'reset' from a stressful situation. The results outline the mode, frequency, intensity, and duration with which elite esports athletes train. When working in elite esports teams, players reported using strategies to improve team cohesion and that the biggest challenge was interpersonal disagreements. Sports psychologists and performance consultants could lean on traditional sports literature around flow states (Csikszentmihalyi, 1990) and mental toughness (Coulter et al., 2010) when working with elite esports athletes to improve performance. Furthermore, helping elite esports athletes better cope with 'tilt' (negative emotions, i.e., anger and frustration) could improve both performance and athlete wellbeing. This research is amongst the first to use thematic analysis to understand success in esports. The results contribute to the growing body of literature highlighting the psychological similarities and differences between elite esports and traditional sports athletes and serve as an index for future research into high performance in esports.

KEYWORDS

Competitive gaming; electronic sport; sports psychology; performance psychology; thematic analysis

What Is esports coaching? a qualitative examination of the experiences of professional league of legends coaches

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^aGerman Sport University Cologne; ^bUniversity of Warwick; ^cLiverpool John Moores University

ABSTRACT

The popularity of electronic sports (esports) has increased exponentially over the last ten years and a thriving professional level with high-profile players, coaches and support staff now exists (Pedraza-Ramirez, Musculus, Raab & Laborde, 2020). Despite this extraordinary growth and proliferation of publications in areas such as player performance (Poulus et al., 2020) and sport psychology (Watson, Abbott, & Pedraza-Ramirez, 2021), the scientific research underpinning the practice of esports coaching is lagging significantly behind (Wagner, 2006; Pedraza-Ramirez et al., 2020). This is perhaps surprising given that the coach represents an influential figure in terms of athletes' well-being, motivation and optimal functioning (Adie, Duda, & Ntoumanis, 2012). Equally, as esports is a distinct domain with digital and global roots (Scholz, Völkel, & Uebach, 2021), the practice of coaching in esports may need to be examined on its own merit from the bottom up. In line with this, the current qualitative study used semi-structured interviews to examine the behaviours and experiences of 14 head coaches (18-29 years old, mean experience = 3.32 ± 2.09 years) in professional League of Legends teams (all competing in the third tier of League competition or higher). All interviews took place online, within five weeks of each other and following the cessation of a competitive split (season). At the time of writing, interview transcripts are being analysed using an inductive thematic approach (Braun & Clarke, 2006). Initial results suggest that professional, interpersonal and intrapersonal knowledge and skills are important to coaches, although significant diversity exists both between and within coaches' practices. Codes relating to player performance, coaches' emotion and the self-organisation of their development, the centrality of technology and ubiquitous influence of competition also appear to be consequential. Provisional themes and sub-themes will be identified and revised by four members of the research group. Two further research group members will then be invited to check and challenge the thematic structure. The results of the study will be presented with a view to providing initial insights into the question of 'what is esports coaching?' in League of Legends. Implications for coaching practice, coach education and further research will additionally be discussed.

KEYWORDS

Competitive gaming; Coaching; Qualitative analysis; Esports

Sport psychological support in esports: a qualitative study on the appraisal and perceived effectiveness of support strategies and sport psychologists

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ABSTRACT

Esports players must perform to a high level and cope adaptively with the stress of the competitive environment (e.g., Smith et al., 2019). Some researchers claim that sport psychologists should be an essential part of any esports team (e.g., García-Lanzo et al., 2020). Indeed, players might benefit from sport psychological support (Cottrell et al., 2018) and evidence-based interventions (Leis et al., 2021). However, currently there is a lack of knowledge as to the effects of sport psychological interventions in the specific environment of esports. This could impair the delivery and effectiveness of both intervention studies and applied practice. Therefore, the present study aimed to provide first insights into (1) the perceived effects of sport psychological support on players and teams, (2) the appraisal of applied support strategies, and (3) factors that influence the appraisal of sport psychologists in esports players. Following criterion-based sampling, semi-structured interviews with seven professional players were conducted. Inductive and deductive analyses were performed using the software MAXQDA Plus 2020. Afterwards, codes were extracted to an Excel spreadsheet and discussed by two researchers with no major disagreements. The preliminary findings highlight that sport psychological support is of high relevance for professional esports players. For instance, players reported a variety of positive effects of sport psychological support for themselves (e.g., successful mental preparation and emotional regulation) and their teams (e.g., improving performance and team cohesion). While implementing pre-performance routines and communication strategies were perceived as being effective, communicating only theoretical information was experienced as negative for performance improvement. Esports players in the current study perceived sport psychologists as beneficial if they acted understanding and competent, whereas aspects perceived as negative included consultants using strict schedules and acting in their own interests. Overall, the results of the present study provide initial insights into the perception of the effects of sport psychological support, the appraisal of applied strategies, and factors in sport psychologists that are perceived as positive and negative. The results could inform practitioners about the benefits of integrating sport psychologists in esports and aspects that should be avoided when working with esports players. Future research should investigate individual esports games, specific situations, and assess the effectiveness of certain intervention strategies in order to establish a strong evidence base for future interventions.

KEYWORDS

Competitive gaming; electronic sport; sports psychology; performance psychology; intervention strategies

Sport psychology support on athletes' performance and mental health: a singapore, china and malaysia perspective

Rebecca Wong

MYwellness & SportScience Consulting

ABSTRACT

This is a symposium presented by sport psychology practitioners from Malaysia and Singapore. All presenters are full time practitioners worked and working with athletes from junior to elite levels in China, Malaysia and Singapore. Sports that presenters support ranges from non-Olympic sport; Summer and Winter Olympic sport to esports. Presenters' approaches are not limited to traditional mental skills, but extended to using clinical methodologies; technology devices and applications to help the athletes. Sport psychology practitioner and first (1st) presenter who works with Malaysian junior athletes used his creativity in educating, implementing in- game routine (intervention) and skills reinforcement program (post-intervention) through technology devices and applications. He will share his work on a 12-week post-intervention program tracking the behavioural change. Second (2nd) presenter is a sport psychology practitioner works with Singapore sailors in preparation for Olympic Games in Tokyo. The presenter will share her work and experience in a descriptive manner. In addition to performance, the presenter will also share her experience in supporting athletes' mental health during COVID-19 pandemic. The third (3rd) presenter is a sport psychology practitioner who worked full time with China winter Olympic sport prior to returning home to Malaysia. At present, the presenter is working with Malaysian Olympic athletes in preparation of Tokyo Olympic Games. The presenter will share her work and experience around mental health, performance and cultural differences between China and Malaysia during the global COVID-19 crisis. Last but not least, the fourth (4th) presenter who works with esports players in Malaysia will share his work done and challenges in a reflective approach. While other traditional sports are hit hard and facing loads of challenges during COVID-19 pandemic, esports industry advances in a different direction. The presenter foresees esports industry will continue to grow and sport psychology practitioners have an opportunity to venture into this new sporting era. In conclusion, all presenters are passionate sport psychology practitioners working with athletes/players and coaches in performance enhancement. The symposium organizer suggests all sport psychology practitioners not to forget about athletes/players' mental health apart from performance. As COVID-19 unfolded as a global crisis, mental health of athletes/players should be paid attention to in order to stay in optimal health and performance.

KEYWORDS

sport psychology;
performance; technology;
Asia; esports

Application of performance profiling and in-game routines to national junior squash athletes

Joshua Cho Min Ng

Squash Racquet Association of Malaysia (SRAM)

ABSTRACT

This paper provides a review of the application of sport psychological interventions, specifically the use of performance profiling and building in-game routines on national junior squash athletes. Apart from the physiological demands, the mental demands required in competitive squash and all sports can greatly impact athletes' performance, where psychological interventions are designed to support athletes through such demands. Performance profiling by Butler & Hardy (1992) is an assessment strategy derived from Kelly's (1955) Personal Construct Theory (PCT) to help athletes identify, reflect, and ultimately become more self-aware of their performance strengths and weaknesses, providing a platform for athletes' assessment on future goal-settings and development of training interventions during the needs analysis stage. During the intervention stage, one-to-one sessions to build athletes' in-game routines were conducted to equip athletes the ability to re-focus and regulate arousal in matches. The application of in-game routines bases from Moran's (1996)'s framework of building a systematic sequence of task-relevant thoughts and actions that athletes can engage in maintain a performance-optimal state (e.g. focused, calm) especially during key moments in competition. In-game routines were initially introduced through an intervention session for athletes to first learn about a new psychological skill, followed by a post-intervention programme to reinforce application of the skill during training or competitions. Implementing such a reinforcement post-intervention ensures the effectiveness of sport psychology support where the 'EAP' acronym of Education, Acquisition, and Practice helps to guide client's progression (Boutcher & Rotella, 1987). The post-intervention programme is conducted through a technological app, Mindmarker which is specifically designed to engage users in reinforcement and enable data measurement on behavioural change. Evidence around the effectiveness of learning via smartphone have suggested signs of higher learning engagement, enjoyment, and most importantly, achieving intended outcomes of skills application if the app programme is robustly designed. The post-intervention reinforcement is a 12-week long programme, with data analytics being captured and shown through a back-end portal view, where data of athletes' status, progress, knowledge retention, and degree of application are measured. Results showed athletes coped better in-between rallies by following their routines instead of showing episodes of distractions or frustrations. The paper concludes with reflections of the practitioner's experience working with the group of squash athletes.

KEYWORDS

squash; performance profiling; in-game routine

Navigating Singapore sailors through to Tokyo olympic games 2020

Joyce YanFang Koh

Sport Institute

ABSTRACT

Introduction: Singapore has had consistent representation for Sailing at the Olympic Games since 1984, including this year's edition of the Olympics. Due to the Covid-19 pandemic, athletes around the world had to adjust their physical and mental preparations for Olympic qualifiers and the Tokyo Olympic Games amid the uncertain sporting calendar, lockdowns, and postponement of the Games. In Singapore, local athletes who were based overseas heeded the call to return home and the country went into a partial lockdown, known as "Circuit Breaker". All non-essential activities were stopped, leaving the athletes unable to train until the infection rates dropped and remained stable. **Purpose:** This presentation will provide a descriptive account of some of the strategies the sport psychology practitioner used to help the Singapore sailors prepare for the Olympic Games Qualifiers and the Tokyo Olympic Games. The presentation will also describe how the support evolved to enhance the sailors' mental wellbeing as the pandemic unfolded around the world. **Methods:** Apart from the common set of mental skills, the performance strategies used included perceptual-cognitive training embedded within physical training sessions as well as psychoeducation on communication. The Mindfulness Acceptance Commitment (MAC) approach was used to support the sailors in adjusting to the uncertainty and maintaining motivation when the Covid-19 outbreak became a pandemic. The practitioner also monitored the sailors' mental wellbeing. Some of the interventions were carried out face-to-face and some were conducted over video calls. Evaluations of the intervention were based on feedback from the athletes and coaches. **Results:** Four Singaporean sailors qualified for the Tokyo Olympic Games in three out of the six boat classes featured at the Games. Most of the athletes and coaches reported experiencing improved communications, reduced levels of anxiety, and minor fluctuations in motivation levels. All athletes reported they felt comfortable having sessions via video calls. **Conclusion:** Sporting performances are influenced by many factors making it difficult to assess the efficacy of perceptual-cognitive training. Cultural differences between athletes and coaches need to be considered when facilitating effective communication. Teleconsultation may become a viable service option and sport psychology practitioners need to consider if it is suitable for their servicing models.

KEYWORDS

Singapore; sport psychology service delivery; sailing; Tokyo Olympic Games

Impact of COVID-19 on female athletes' performance and mental health in China VS Malaysia: difference in culture

Rebecca Wong

MYwellness & SportScience Consulting

ABSTRACT

Introduction: Elite athletes faced more challenges than before when Covid19 pandemic hits everyone hard in the sport industry. With a lot of uncertainties and challenges ahead of them, elite athletes have to remain training to continue pursuing their Olympic dreams without a plan. The author is a full time sport psychology practitioner worked and working with Chinese and Malaysian elite athletes. The presenter has spent 18 months working with the China speedskating team throughout the pandemic. Prior to that, the presenter had 15 years of practical experience with Malaysia elite athletes. Purpose: This presentation aimed to share the work done and challenges by presenter on both Malaysian and Chinese elite athletes. The presentation will also share the presenter's experience in supporting athletes' mental health and wellbeing as the pandemic unfolded as a global crisis. Methods: The cases presented in this report are based on two (2) different contexts. Apart from traditional psychological skills techniques, presenter emphasize on Mindfulness, Rational Emotive-Behavioral Therapy (REBT), on top of traditional mental skills. These skills were often implemented to enhance performance via learning to cope with adversities on and off- the field. Mindfulness-Acceptance-Commitment (MAC) (Gardner & Moore, 2007) and REBT (Ellis, 1957) were used, adopting to Adversity Coping Framework developed by Si and colleagues (Si, 2006; Si et al., 2010). The presenter believes that good performance is about how well one could handle adversities in many challenges during performance beside the ability to repeat the "ideal performance". Regular consultations were conducted, and changes were tracked and monitored. The presenter observed desired changes on the athletes from identifying issues, need analyses, structured the intervention as well as implemented self-evaluation and reflection. Conclusion: Primarily, the case study presentation supports the use of clinical based intervention in addition to mental skills training in performance enhancement. Secondly, mental health negligence still exist and athletes did not received proper mental health care throughout the global crisis. The sudden change in athletes' life due to pandemic has proven mental health supports is a concern and it deserves to be highlighted and emphasized with standard procedures. Last but not least, the presenter experienced cultural differences in both country although they shared same language and similar lifestyle backgrounds where it again emphasized the importance of cultural competence of every sport psychology practitioners.

KEYWORDS

Asia; performance; mental health; cultural differences; applied sport psychology

Applying mindfulness for improving sport performance and mental health of elite athletes: an asian perspective

Chun-Qing Zhang

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ABSTRACT

In the current symposium, three presenters from Singapore, Hong Kong China, and Mainland China will talk about their recent thinking and empirical studies on using mindfulness- and acceptance-based approaches to improve the sport performance and mental health of elite athletes. For the first presentation, Dr. Ying Hwa Kee will talk about his recent thinking on wu wei and non-striving as a mindfulness-based approach for athletes. Origins and rationales of why wu wei and non-striving can work in elite sports contexts will be discussed along with mindfulness practice and future direction. The second presentation will be delivered by Dr. Ning Su from the Hong Kong Sports Institute. He will introduce the findings of the MAIC training program on improving sport training performance and several psychological factors, which were generally effective. The third presentation will be conducted by Dr. Danran Bu on the effectiveness of the mindfulness- acceptance- insight- commitment approach (MAIC) on improving Chinese elite badminton players' mindfulness, acceptance, as well as mental health.

KEYWORDS

Mindfulness; Acceptance; Mindfulness training; Elite athletes; Sport performance

Wu wei and non-striving as a mindfulness-based approach for athletes: exploration and possibilities

Ying Hwa Kee

Nanyang Technological University

ABSTRACT

Mindfulness-based approach has been adopted more evidently in sport psychology in the last decade. There are many mindfulness-based interventions have been developed, such as the Mindfulness-Acceptance-Commitment (MAC), the Mindful Sport Performance Enhancement (MSPE), the Mindfulness Meditation Training for Sport (MMTS), and the Mindfulness-Acceptance-Insight-Commitment (MAIC). However, there exist a largely undiscussed issue that is associated with mindfulness - non-striving. Non-striving would mean the absence of devotion of serious effort or energy toward a task. In terms of mindfulness practice, an attitude of non-striving is about non-doing while undertaking the practice, trying less, and simply experiencing the moment. Although the notion of non-striving seems at odds with the competitive and necessity for striving in sport, the pursuit of peak performance could be well-facilitated by athletes' appreciation of non-striving while a mindfulness-based approach is adopted. This notion of non-striving discussed in secular mindfulness literature possibly roots from works in Eastern and Buddhist philosophy. Specifically, within the Chinese philosophy, the term wu-wei or effortless action has the connotation of non-striving as it refers to the harmonized state of mind while one performs actions spontaneously, with freedom from "the need for extended deliberation of inner struggle". To this end, the notion

KEYWORDS

Mindfulness; Wu wei; non-striving

of wu wei or effortless actions and how it has been integral in the Chinese martial arts practices seems worthy of future exploration as a research direction in sport psychology. In particular, wu wei had been discussed with the flow experience previously, so there would be some relevance for sport. A suggested version of non-striving based mindfulness practice will be introduced. Future research directions will also be discussed. It is hoped that the notions of wu wei and non-striving for secular mindfulness practice can be further operationalized with more empirical studies.

A mindfulness and acceptance-based training for hong kong elite adolescent athletes

Ning Su

Hong Kong Sports Institute

ABSTRACT

This research applied a specifically designed mindfulness and acceptance-based training program (e.g., MAIC) among elite adolescent athletes from Hong Kong. This research aimed to examine the effectiveness of the MAIC training program on relevant psychological factors (i.e., mindfulness, acceptance, performance-related satisfaction) and sport training performance on Hong Kong elite adolescent athletes, and explore the athletes' experiences (i.e., receptiveness and perceptions) of completing the MAIC program. The mixed-method was used in this study. A randomized controlled trial (RCT) was conducted through a 2 (groups) x 3 (data collection points) design with 40 athletes, who were randomly assigned in to the MAIC training group (MT; n = 20, Mage = 15.65) and the control group (CG; n = 20, Mage = 15.85), to testify the effectiveness of the MAIC. Following the RCT, a qualitative part was used to explore the athletes' real experiences towards the MAIC program. In this part, all athletes participating in the MAIC program were invited to join a semi-structure interview voluntarily, yet only 14 of 20 volunteered to take the interview, respectively. The 2x3 mixed-design ANOVA and thematic analysis were conducted for data analyses. The MT athletes' mindfulness, acceptance, performance-related satisfaction, and sport training performance significantly improved at the post-training data point compared to the pre-training. However, the mindfulness, acceptance, performance-related satisfaction and sport training performance of the MT athletes all dropped at the following-up data point compared to post-training, and the acceptance level of the MT athletes didn't have significant difference from the CG athletes at the following-up data point. Furthermore, through the thematic analysis, the qualitative part generated four general dimensions, including (a) Attitude towards to the MAIC training, (b) Reflection on the MAIC learning process, (c) Outcome of the MAIC training, and (d) Recommendation for future MAIC training. The findings suggested that the MAIC training program was effective on improving sport training performance and several psychological

KEYWORDS

Mindfulness; Acceptance;
Sport performance;
Psychological training;
Adolescent athletes

factors in elite adolescent athletes from Hong Kong. Additionally, the results of the qualitative part were consistent with and supported the quantitative part, that gained in-depth understanding of the athletes' real experience and provided relevant suggestions for the MAIC's further development.

The effect of mindfulness training on mental health in chinese elite badminton players: a randomized controlled trial

Danran Bu

HuBei Institute of Sport Science

ABSTRACT

The prevalence of mental health issues among elite athletes is increasing, which not only negatively affects their mental well-being, performance and development but can also result in heavy personal, social and economic burdens. Mindfulness-based approach might be an effective method to relieve mental health issues. The present study aimed to evaluate the effectiveness of the mindfulness- acceptance- insight- commitment approach (MAIC) on improving Chinese elite badminton players' mindfulness, acceptance, as well as mental health. A Randomized controlled trial with two parallels and single blind design. A total of 49 Chinese elite badminton players (male = 29, female = 20) ranged from 17 to 26 ($M = 19.51$, $SD = 2.27$) years old were recruited from the Badminton Team of one province. The participants were randomly assigned to either the intervention group ($n = 25$) or the control group ($n = 24$). The intervention group received a seven-week MAIC mindfulness training program, while the control group received no training during the intervention period, but received the same complementary mindfulness training only after the completion of follow-up data collection. All psychological variables (mindfulness level, acceptance, anxiety, depression, and satisfaction with daily training and competition) were assessed at pre-intervention, post-intervention, and three-month follow-up. The two-way repeated measures ANOVA analysis revealed that comparing with the control group, the MAIC group significantly improved in the mindfulness, acceptance, as well as training and competition satisfaction. In addition, significant reduction of anxiety and depressive symptom was found in the intervention group. The post-hoc test indicated that only the intervention group had significant enhancements in all variables when comparing the difference between pre- and post-test, as well as between pre- and follow-up test. It is notable that the intervention effects for intervention group further improved in depression, training and competition satisfaction, and acceptance when comparing the difference between post- and follow-up test. However, such residual effects were not additionally enhanced in mindfulness and anxiety between post- and follow-up test. The MAIC approach was proven to be effective on improving the mindfulness, acceptance, and training's and competition's satisfaction, as well

KEYWORDS

Mindfulness training; Elite badminton athletes; Mental health; RCT design

as reducing the depression symptom in the Chinese elite badminton players. The findings could contribute to future studies and application aiming to improve the mental health of Chinese badminton players.

Interoception and self-sensing for managing in stress and performance

Richard Keegan

University of Canberra

ABSTRACT

Numerous strands of research converge on an important role of self-sensing – in some form – for the regulation of stress and coping during high performance. Relevant concepts may include mindfulness, interoception, self-awareness, subjective affect/mood, and emotional awareness, but this list is not exhaustive. In this symposium we pay particular attention to concepts of: (i) subjective readiness (e.g., for exercise, for military role performance); (ii) interoception (e.g., for injury prevention and/or management); and (iii) emotional awareness (e.g., in relation to resilience during emergency services work). Overall, we will use diverse methodologies to build a case that these interior sensing capabilities are highly promising in managing performers under stress – easily reconciled with existing models of stress and performance – and that their measurement is possible, but that it may not readily align to prevailing practices: either in published sport psychometrics literature, and also in practice. We will overview research demonstrating a new opportunity to measure-and-monitor subjective readiness: as an acute state of preparation to perform any imminent task or role. Second we will explore the possible differences between individuals in perceiving readiness, with evidence suggesting individual ‘profiles’ – gathered over time – differ from the model based on a large sample. From there, we explore the roles of interoception in injury management for long-distance ‘endurance’ athletes, and the role of ‘emotional awareness’ in enabling resilience for emergency-services personnel. Finally, while we recognise the substantial body of research on mindfulness that is pertinent to self-sensing, we explore other avenues of responding to the likelihood that – like other skills – self-sensing capabilities can be developed over time. We will draw from established research in performing arts – particularly actor training – to characterise avenues for interventions that deliberately develop self-sensing, for the promotion of performance excellence, even under stress.

KEYWORDS

interoception; self-sensing;
emotional awareness;
readiness; stress

Development and initial validation of a self-rated Acute Readiness Monitoring Scale (ARMS)

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ABSTRACT

Personnel in many professions must remain 'ready' to perform diverse activities. Managing individual and collective capability is a common concern for leadership and decision makers. Typical existing approaches for monitoring readiness involve keeping detailed records of training, health and equipment maintenance, or – less commonly – data from wearable devices that can be difficult to interpret as well as raising privacy concerns. A widely applicable, simple psychometric measure of perceived readiness would be invaluable in generating rapid evaluations of current capability directly from personnel. The data-collection was facilitated by Defence Science Technology and The Australian Army, between August and October 2019. The total final sample consisted of 770 Australian Army personnel (male = 677, female = 93), with a mean age of 26.5 years (SD = 7.0 years). Participants were drawn from all three phases of the Force Generation Cycle (Ready = 358; Readiing = 186; Reset = 226). This sample was divided at random into a sample of 500 for 'exploratory factor analysis' (EFA) and modelling (Study 1) and 270 for confirmatory factor analysis (CFA - Study 2). Further, we used the entire sample to assess concurrent validity of the ARMS factors. Developed from a bespoke pool of candidate items, the 32-item ARMS demonstrated good model fit good fit [$\chi^2(428) = 1034.867$, $p < 0.001$; $\chi^2/428 = 2.4$; CFI = 0.95; TLI = 0.95; SRMR = 0.05; RMSEA = 0.05 (90% CI: 0.05, 0.06)], and comprised nine factors: overall readiness; physical readiness; physical fatigue; cognitive readiness; cognitive fatigue; threat-challenge (i.e., emotional/coping) readiness; skills-and training readiness; group-team readiness, and equipment readiness. CFA with the remainder of the sample demonstrated acceptable model fit data [$\chi^2(428) = 902.363$, $p < 0.001$; $\chi^2/428 = 2.1$; CFI = 0.94; TLI = 0.93; SRMR = 0.06; RMSEA = 0.06 (90% CI: 0.06, 0.07)]. Readiness factors were negatively correlated with recent stress, current negative affect and distress, and positively correlated with CD-RISC resilience, wellbeing, current positive affect and a supervisor's rating of soldier readiness. The development of the ARMS facilitates a range of new research opportunities, as well as enabling quick, simple and easily interpreted assessment of individual readiness.

KEYWORDS

readiness; military; acute; psychometric; measurement

Modelling readiness-to-exercise: nomothetic and idiographic perspectives

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ABSTRACT

To improve exercise adherence, experts suggest that programming must be designed to minimize unpleasant experiences and adapt to person-specific signals (e.g., mood, pain, fatigue) that influence behaviour over time. Derived from the sport conditioning literature, the practice of matching daily workloads to an individual's 'readiness' (pre-exercise physical and mental states) offers a novel strategy to meet experts' suggestions. To date, however, the scope for individual differences regarding the operationalization of readiness-to-exercise has not been examined. To explore this possibility, we set out to characterise any heterogeneity among idiographic models of readiness-to-exercise. We conducted factor analyses (FA) using two existing databases that contained the same twelve items representing four dimensions of readiness (vitality, fatigue, physical discomfort, health & fitness). We identified a nomothetic reference structure by applying R-technique FA to survey data from individuals ($N = 572$; $22 + 6y$, 44% women) entering a fitness centre. Separately, we generated idiographic models by applying P-technique FA to individuals' ($N = 29$; $24 + 6y$, 55% women) incidental ratings collected via ecological momentary assessment ($50 + 4$ assessments per person). The intraclass correlation coefficient (ICC) was computed to assess within-person consistency in first factor scores. Consistent with prior research, the reference structure contained four factors, of which health & fitness explained the most variance (32%), followed by fatigue (20%), vitality (12%), then physical discomfort (9%). Among idiographic models, heterogeneity was observed regarding number of factors ($3 + 1$) and the variance explained by the first factor ($38 + 10\%$). Some similarities in item loading patterns were observed across idiographic models and first factor scores were moderately consistent within individuals ($ICC = 0.62$). Results offer 'proof-of-concept' that person-specific models of readiness depart from a generalized reference structure, and that temporal variance is observable in individuals' strongest explanatory factors. Future research should determine if such 'interpersonal signatures' of readiness-to-exercise predict clinically relevant exercise outcomes (e.g., in-task affective valence, volitional effort).

KEYWORDS

exercise readiness; exploratory factor analysis; P-technique; nomothetic; idiographic

The role of emotional awareness: a qualitative investigation into the resilience of emergency services personnel

Emily Jacobs

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ABSTRACT

Emergency services personnel are frequently confronted with stressors, ranging from occupational pressures to life-threatening situations. They are at risk of emotional ill-health because their daily routine involves unpredictable traumatic stressors. Recent

KEYWORDS

emotional awareness; firefighters; paramedics; police; resilience

research suggests emotional awareness may be a key variable promoting resilience - as a capability offering the agility to detect internal emotional signals and utilise them in decision making and stress appraisal. To further investigate these potential links, this study explored the experiences of emergency services personnel, and links between emotional awareness and resilience. We adopted thematic analysis of eleven in-depth interviews with emergency services personnel - spanning firefighters, paramedics, police and emergency call-handlers. Participants identified resilience as crucial when coping with stressors, however, they defined resilience as remaining unemotional and unaffected by these stressors. These potentially unhealthy beliefs may impact their ability to remain resilient: demonstrating low emotional awareness. Participants defined emotional awareness as understanding emotions, triggers and reactions, and recognised associated benefits on communication, coping, resilience and burnout. Nonetheless, most participants did not engage in practices to improve their emotional awareness. Although most participants were aware of the benefits, there remained barriers such as beliefs or lack of skills, that interfered with participants' ability to cultivate emotional awareness that would promote resilience. With this in mind, some participant narratives described profound improvements in resilience and more adaptive coping, in response to trauma, through the cultivation of emotional awareness - for example, through mindfulness and reflective practices. Thus, developing emotional awareness may help emergency services personnel process difficult experiences and enhance their resilience, promoting well-being and career longevity. Training on resilience and emotional awareness would be beneficial at the individual, organisational and financial levels.

Avenues for building self-sensing and emotional awareness: art meets sport

Rea Dennis

Deakin University

ABSTRACT

In this final session of the symposium we explore existing and novel interventions for the development of self-awareness and interoception. Typically, these capabilities cannot readily be developed through didactic means or formal instruction, but instead require experiences to act as 'stimuli', paired with deliberate processes such as reflection to pay attention to, explore, and understand these experiences. Building on recent trends toward mindfulness and self-regulation in research and practice, here we discuss somatic and movement practices that scaffold perceptual stimulation: acting to facilitate awareness- and attention-training for the actor and the athlete. Nurturing a deepfelt sense of the interior world can 'bring the senses alive' and can build performer (actor and athlete) capacity to monitor sensations of pain and discomfort; while simultaneously engaging

KEYWORDS

self-awareness;
interventions; actor training;
theatre; performance

in expressive acts that might demand attention be paid outwardly (e.g., sport). We will review and evaluate literature from actor training research, arguing that deliberate attention to the body's sensations during/through key movement and somatic practice is a strategy to develop performers' ability to 'stay present', potentially increasing one's capability for self-management. We will review models and research suggesting that that somatic practices enrich our 'attention to the lived, subjective experience' and – for example – ways of articulating experiences such as fatigue, pain, elation and flow, which are difficult to describe. As such, this presentation will highlight synergies and opportunities between both sport and performance research with the performing arts in developing novel yet conceptually coherent interventions. We provide examples of interventions that are well established in actor training literature and practice: promoting affective meaning-making, and tolerance for ambiguity and discomfort. We conclude with suggestions for future research that would hold promise for making advancements in self-sensing and self-regulation research: spanning sport, performance, exercise and actor-training.

In the service of meaning and in the midst of a pandemic. supporting athlete performance through ACT and mindfulness.

Kristoffer Henriksen and Carsten Hvid Larsen

University of Southern Denmark

ABSTRACT

Elite athletes may be seen as having supernatural mental powers and unshakeable confidence, a misconception that may stimulate athletes to go to great lengths to control their minds. Acceptance commitment training (ACT) approaches, which are gaining momentum in sport psychology, suggest that trying to control internal states is not only futile, but also part of the problem. Instead, athletes are taught to mindfully engage in the present moment; open up and be willing to experience the full range of thoughts and emotions that are a natural part of pursuing an elite sports career; and pursue committed actions towards the values that they would like to guide their life and sport career. 2021 has put applied sport psychology to the test. Athletes have struggled to find meaning, have had to accept the unbearable, and have found themselves in what has seemed like an eternal limbo of high pressure, uncertainty and low or no control. Never before has acceptance, a strong sense of values and presence been more important and also challenging. The presenters in this symposium are all experienced sport psychology practitioners from across the world. They will present stories from their application of ACT with high level athletes under pressure in the midst of a world beyond recognition. First Kristoffer Henriksen will set the scene with a story from the Tokyo Olympic Games.

KEYWORDS

Olympic Games; Mindfulness; Mental strength; Science practitioner

Peter Haberl, from the USOPC, will share his experiences of organizing a seven day silent retreat for an Olympic team sport in preparation for the Games. Jakob Hansen is a private practitioner and will present how he designed and carried out a virtual ACT program over ten weeks. Next, Mark Aoyagi who has worked extensively in professional sports in the US will talk of a tricky case with a musician, in which values collided. Finally, Daniel Birrer, who works with Swiss Olympic athletes, will use examples from his preparation of Athletes for Tokyo to illustrate how relying on performance as source of self-worth is not possible when athletes are not allowed to compete and that working on the Self-as-Context process can instead reduce absorption in the self.

10 years in the making: a training camp for the mind in preparation for Tokyo 2020

Peter Haberl

US Olympic and Paralympic Committee

ABSTRACT

This presentation will describe the rationale, organization and execution of a 7-day silent mindfulness retreat with a team sport in preparation for the 2020 Tokyo Olympic Games. The last decade has seen an increased use of mindfulness and ACT based approaches by applied sport psychologists working in Olympic sports (Henriksen et al. 2020; Haberl 2011). While some ACT therapists tend to emphasize and recommend brief mindfulness practices and de-emphasize longer meditative mindfulness practices (Harris 2019), the mindfulness traditions themselves with their eastern roots offer a range of formal silent meditative practice that can range from minutes, to hours to days to months and in extreme cases even years (Siegel 2010; Goleman & Davidson 2019). In the west, such silent retreat practices are often offered in 5-to-10-day formats at various retreat centers such as Spirit Rock in California. While such retreats are akin to a training camp for the mind, and training camps are obviously a staple of Olympic preparation, the idea of a training camp for the mind in the form of a silent retreat has not yet been utilized by Olympic level athletes and teams. As a matter of fact, experienced ACT sport psychology consultants have expressed disbelief in the feasibility of such a retreat in the Olympic world for good reason – what kind of coach would give up seven days of physical training to sit on a cushion in silence? Yet mindfulness practice, even mere minutes (Jha leads to benefits, and more practice may lead to more benefit (Goleman & Davidson 2017), not unlike practice in sport, so an argument can be made that a mindfulness retreat may be beneficial as well. However, recent research also highlights potential dangers of such extended retreat practices for participants (Lindahl et al. 2017). The presenter will discuss the impact of these research findings on planning and executing a seven-day silent retreat with an Olympic team in the lead up to Tokyo 2020.

KEYWORDS

Meditation; ACT; Mindfulness; Performance psychology

The mindful golfer: a 10-week virtual mindfulness and ACT program with the national youth team in golf

Jakob Hansen

Independent sport psychology consultant associated with the Danish Golf Association and external consultant Team Denmark

ABSTRACT

In the process of teaching the Danish national youth team in Golf how to become “mindful golfers”, I would normally meet with the players on five camps through-out a year and do a series of workshops and trainings. I have always thought of sport psychological services as dependent on physical presence and a close relationship. However, the Corona Pandemic forced me to rethink that understanding and pivot the way I do my work. Driven by a curiosity based on the questions - “Is it possible to create a virtual intervention that not only matches but exceeds the impact that I used to have on the players? And if yes, what would that look like?” - I created a 10-week virtual mindfulness and ACT program. The development built on my experience working with golf players from talents to Pro Golfers winning on the European Tour, and with inspiration from different protocols, primarily the MAC protocol (Gardner & Moore, 2007) and the MBSR-program (Kabat-Zinn, 1990). The program was based on 10 x 45 minutes virtual workshops. The sessions consisted of theory, psychoeducation, functional analysis, values exercises, mindfulness training, yoga, reflections and exercises. In between the sessions, the athletes practiced at home mindfulness training and did different exercises and tasks to increase their self-awareness. Furthermore, the athletes practiced committed actions in different challenging situations in and outside of sport to build their mental strength. The evaluation after the process showed that the players found the process very beneficial. The players reported that they were more aware of thoughts and emotions and that they made better, more active and courageous choices. This outcome was especially helped by the frequency, consistency and form of the workshops. Even though the program was not research based, the program serves as an encouragement for practitioners and researchers to go further in the exploration of how virtual sport psychology interventions can enrich and supplement athlete development.

KEYWORDS

Performance psychology;
Applied sport psychology;
Online service

When priorities intersect: a case study of committed action, high performance, and the real world

Mark Aoyagi

University of Denver

ABSTRACT

This presentation will focus on what happens when values intersect through the case of K. K is a 45-year-old professional musician and songwriter who wanted to bring more structure and formal training to her mental skills and preparation. In our earliest conversations, it was evident that she was pulled in many different directions. Some of these directions were goal conflicts (e.g., changing people's lives through music vs. winning Grammys) and some were life demands (e.g., committed to craft vs. taking care of ailing parent). This is a case of committed action in the real world: where values can clash, compete, and confound, and where values can also concur, collaborate, clarify. To identify and prioritize her values K completed several exercises, notably the values card sort and values bullseye. This led to some great insights for her, particularly in identifying what were her values as opposed to values that were internalized social expectations (e.g., being the good girl) or that were externally focused goals (e.g., winning awards). With clarity on her values, K then distilled her values into a personal philosophy: All in with pluck and zeal. K then sought to apply her values to committed actions. This is where we moved out of the "lab" and into the real world. As a brief snapshot into just some of the challenges that K was facing: she had to coordinate all of the moving parts involved with creating, marketing, producing, and distributing a new album and live shows/concert dates all in the midst of a global pandemic that caused all elements of these processes to be in constant flux; she was immersed in improving her craft (the playing of her instrument and singing); she was dedicated to writing new songs and the creative process; she was navigating a committed long term relationship with a partner who lived on the opposite coast of the U.S. (again, during a pandemic that did not allow them to travel and see each other in person); and she had a father who was in the process of dying and she was overseeing his hospice care – and had been through a protracted (multiple years) process of doing the same with her mother who had died of cancer a few years earlier. This case will attempt to demonstrate the conceptualization and implementation of mindfulness and ACT with an elite performer managing multiple demands.

KEYWORDS

Musical performance; Values; ACT; Performance psychology

Dancing with the ACT processes to maintain psychological flexibility in the face of the pandemic challenged Tokyo 2020 olympics

Daniel Birrer

Swiss Federal Institute of Sport Magglingen

ABSTRACT

The goal of acceptance commitment therapy (ACT) is to help people to enhance their psychological flexibility in order to bring them closer to living a valued life. Generally, the world of elite

KEYWORDS

Acceptance; Self-esteem; Mindfulness; Self as context; Psychological flexibility

sport is very outcome oriented and living a valued life means for many athletes to strive for performance and prove their ability in competition. In many sports, participation and success at the Olympic Games is considered the pinnacle of an athletic career. Accordingly, the cancellation or postponement of the Tokyo 2020 Olympic Games has unsettled many athletes and put them under stress in various forms and to varying degrees. Psychological flexibility has never been more in demand than in these days of global pandemic with the uncertainties of canceled competitions, postponed selections and the uncertainty about the feasibility of newly announced competition calendars. The value system of many athletes and their acceptance of what is in consciousness and what may arise or come into consciousness has been questioned and questioned. This made guiding athletes during this challenging time a perpetual and repetitive dance with the 6 ACT processes. This short presentation uses examples from working with athletes in preparation for the 2020 Olympics to show how the ACT processes were used and what it means to build real acceptance, readiness, and openness. It showed that the Self-as-Context process is a central link between Values, Acceptance, Present Moment Awareness, Defusion and Committed Action. Sportspersons with strong athletic identities sometimes seem to have ego-boosting obsessions and manifest a strong tendency of self-esteem protection. Relying on performance as source of self-worth is not possible when athletes are not allowed to compete. Working on the Self-as-Context process can reduce absorption in the self (e.g., being focused on a constructed and conceptualized ego), which is also implicit in the practice of mindfulness within a Buddhist context and sometimes forgotten in a more secular and culturally adapted western form of mindfulness. Being able to let go of a problematic conceptualized self can liberate athletes from non-functional attempts to protect their self-esteem and make movements towards a more balanced life even when circumstances restrict a normal way of life.

Sport psychology support for Hong Kong elite athletes competing Tokyo 2020 olympics

Xiaobo Jiang

Hong Kong Sports Institute

ABSTRACT

Introduction: Athletes from all over the world long for competing in Tokyo 2020 Olympics. After it is postponed a year due to the global pandemic of COVID-19, it may pose some new challenges, i.e. motivation, emotion regulation, competition adaptation, for different athletes, especially for these medal-hopeful athletes. The psychological aspect is an essential part of the preparation for competing in Tokyo 2020. Purpose: Jointly working with a multidisciplinary sport science supporting team for different sports, Sport Psychologists of Hong Kong Sports Institute (HKSI)

KEYWORDS

Tokyo 2020 Olympics; Career adaptability; Remote psychological support; Mental toughness; Multi-disciplinary support

designed and conducted some evidence-based and tailored psychological supporting plans for Hong Kong medal hopeful athletes. We here present the basic theoretical model, preparation plan, and implement details of the mental supporting plan for some elected medal hopeful athletes of Hong Kong. **Methods & results:** Specifically, Dr. GangYan Si, Senior Sport Psychologist of HKSI, has been focusing on building up the career adaptability of a senior athlete during the span of three Olympic Games. Series of consultations were given to the senior athlete based on the concept of career adaptability, helping athlete cultivate autonomy-supportive thinking. The athlete overcome various difficulties and sustained a high-level athletic as well as academic career in HK sport environment. Dr. Henry Li, Sport Psychologist of HKSI, works with an athlete, who is mainly training overseas. Remote supports via online tools is a new, but unavoidable attempt. Helping the athlete to conceive adversity coping mindset and construct some specific coping strategies. The athlete feedbacked positively with the supporting plan. Ms. Hau Soek, Sport Psychologist of HKSI works as part of a cross-disciplinary sport science team to support high profiled athletes. Specific considerations are given when cooperating with different disciplines to enhance better working outcome when preparing athletes for the extended quadrenium of the Tokyo 2020 Olympic Games due to the COVID-19 pandemic. Mr. Jiang Xiaobo, Sport Psychologist of HKSI, works with a pair of mix double athletes. A CBT model-based emotion regulation consultation to the female player and the 4Cs model of mental toughness training plan with the mixed doubles. **Conclusion:** Considering the ongoing pandemic and uncertain situation, sport psychologists are one of the key support groups for athletes. Regardless of the results, the one year duration of delay gains us, as sport psychology professionals' very fruitful experience. We would like to organize this platform for sharing of working experience and to discuss with colleagues and experts from different countries and areas.

Development of career adaptability of a Hong Kong olympic athlete

GangYan Si

Hong Kong Sports Institute

ABSTRACT

Introduction Career adaptability is the core competence that athletes need to develop on the career path which is full of uncertainty, change and challenge. Career adaptability is the basic guarantee for athletes to focus on training and pursue excellent performance, and is the key factor for their career transition and future development after retirement. This presentation will describe how one HK Olympic athlete has built up a career adaptability during the span of three Olympic Games.

Purpose Career adaptability is defined as the self-regulation strength or capacities that a person may draw upon to solve the

KEYWORDS

Career adaptability; Self-regulation; Olympic Games

unfamiliar, complex and ill-defined problems presented by developmental vocational tasks, occupational transitions, and work traumas (Savickas & Porfeli, 2012). This single case report aims at exploring how an Olympic athlete has overcome various difficulties and sustained a high-level athletic as well as academic career in HK sport environment. **Methods & Results** The athlete is one of the world top athletes in the sport as well as a student at a world-renowned university. The sport psychologist has developed a working rapport with this athlete over a period of three Olympic Games. This presentation will describe how this athlete adjusted the conflict between being a full-time athlete and a university student as well as re-built a positive attitude and extended athletic career from the major blows (serious injury, disqualification of Olympics, and postponement of Olympics). Career adaptability is conceptualized as psychological resources that support self-regulation strategies along the four dimensions of concern, control, curiosity, and confidence (Savickas, 2005). These four aspects within this case will be discussed in the presentation. **Conclusion** Athlete's career adaptability could be gradually developed through an autonomy-supportive system and organizational resources.

Adversity coping in uncertain circumstance with remote service delivery

Hin Yue and Henry Li

Hong Kong Sports Institute

ABSTRACT

Introduction An athlete involved in closed skill sports have been training overseas for more than six months with ongoing uncertain travelling and training schedule before Olympic in July 2021. It can be very tough for many athletes who are used to fixed competition and training schedule with concrete planning. Due to ongoing overseas schedule, the multi-disciplinary supporting team including psychologists have to deliver our service remotely. From a psychological perspective, adversity coping becomes a very important key to help athletes sailing along the journey. **Purpose** The journey for Tokyo OG has been full of uncertainty, while athletes used to train for controllability. This presentation will share how this athlete prepare for the delayed OG with the assistance of psychologist working in the whole multidisciplinary team. The triangulation among athlete, coaches and psychologists will be explored too. **Methods and results:** Ongoing and regular online communication with coaches, within multidisciplinary setting and with athlete have been carried out throughout the year. There are ongoing logistic inquiry, daily life issue, personal health concern, training performance and competition preparation matter throughout the consultation. Based on adversity coping perspective, working on those aspects, psychological consultation covered problem brainstorming, coping strategy design, resource gathering,

KEYWORDS

Adversity coping; Tokyo 2020 Olympic Games; Remote service delivery

strategy implementation and evaluation. Having the service delivered remotely also leads to some challenges and insight. Conclusion Psychologists, athletes and the whole team involved facing the uncertainties of OG need to adjust oneself and can be powerful to support each other. Psychologists can help facilitating the athletes and the group with high awareness of self-care. Adversity coping could works as a major principle in uncertain circumstance, especially with remote service delivery for a long period.

Future directions in imagery and hypnosis intervention research

Tony Morris

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ABSTRACT

In the Covid era, organising intervention-based research has been particularly challenging, so this is an appropriate time to reflect on our recent imagery research, leading to recommendations to address important issues for future studies. In this symposium, we briefly summarise imagery and hypnosis research projects we conducted, then identify issues we consider fruitful to examine in future studies. Following a brief introduction by the Convener, Dr Garry Kuan reports on a new study of the effect of imagery on performance and brain activity and performance in esports athletes proposing directions for future research on imagery interventions in esports. Next, Dr Fatemeh Fazel describes three studies she conducted on the delivery of imagery interventions. In the first two, she compared routine, progressive, and retrogressive imagery, with a control condition in basketball free-throw shooting (FTS). In the third, she tested findings in a single-case design (SCD) study in high-level league competition across a whole season. Self-efficacy for FTS was also monitored in these studies. Dr Fazel recommends future research to refine her important conclusions. In hypnosis research in sport, Dr Dung Tien Dao reports on a new SCD study conducted to test the efficacy of future progression hypnosis on golfers' putting performance in pennant competition across 12 club tournaments. This study was based on findings from a field study comparing traditional hypnosis (including trancework) with neutral hypnosis, (induction, deepeners, wake-up protocol), and a second field study comparing regression-based trancework with suggestions within a future progression framework. In the SCD study, Dr Dao monitored global state flow and nine flow dimensions, along with performance, to explore relationships between flow dimensions and hypnosis, as well as comparing meaningfulness of different performance measures. He concludes by exploring several significant theoretical and methodological issues. Then, Dr Sho Itoh summarises a series of three studies examining the imagery dose-response relationship in basketball free-throw shooting. Each adopted the same design, examining three levels

KEYWORDS

Esports; retrogressive imagery; future progression hypnosis; imagery repetitions; imagery frequency

of a dose variable, imagery repetitions per session in Study 1, session duration in Study 2, and frequency of sessions per week in Study 3. Dr Sho draws conclusions about this new protocol and comments on design issues for future studies. Finally, the Convener briefly discusses recommendations of the presentations and opens the symposium for general discussion.

The effects of imagery intervention on muse EEG brain waves and performance in malaysian esports players

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ABSTRACT

In the current era of esports gaming, esports are growing in popularity worldwide, including among Malaysian esports athletes, so there is a greater need for research to motivate, inspire, and improve the performance of Malaysian esports athletes. Imagery is a form of mental practice that has been shown to improve athletes' performance. However, there is a dearth of research on the use of mental imagery to enhance esports performance. Thus, the purpose of this study was to examine the effect of mental imagery on esports performance. The study received approval from the USM Human Ethics Committee. A total of 24 participants volunteered to take part in this study. They were all male, aged between 19 to 29 years ($M = 23.33$, $SD = 1.93$), and were Defense of the Ancients (DOTA) gamers with a minimum of 1000 hours of training recorded in their online account profile. The participants were randomly assigned to imagery intervention and control conditions. The intervention condition participants received imagery and breathing sessions and control condition participants received breathing sessions only. Imagery ability was measured by SIAM (Watt et al., 2004), as five dimensions (vividness, control, ease, speed, duration), six sense modalities (visual, auditory, kinaesthetic, tactile, olfactory, gustatory) and emotion. In the present study, all participants had moderate to high imagery ability as measured by the sport imagery ability measure. EEG Brain-waves were recorded using the MUSE EEG portable headset. Mixed factorial ANOVA indicated a significant change from pre- to post-test among the participants' performance scores (time effect: $F = 17.75$, $p < .001$, partial $\eta^2 = .45$). The intervention condition showed a significantly larger increment in performance score than the control condition (increment value: 119.17 vs 7.58). However, no significant difference in the five EEG brain waves was observed between conditions, despite the fact that all waves decreased between pre-and post-test for the imagery condition, but not the control condition. The study suggests that imagery interventions could improve performance of Malaysian esports players.

KEYWORDS

mental imagery; esports; EEG; Malaysian

Future directions in imagery delivery

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ABSTRACT

Imagery has typically been delivered by devising a written, recorded, or live imagery script, including details of the skill and competition context. Athletes practise this “routine” imagery script a number of times in exactly the same form. Williams et al. (2013) examined “layered” imagery delivery, where aspects of imagery were introduced in layers, adding greater complexity stage by stage. Concurrently, we began a 3-study project examining the most effective way to deliver imagery interventions. In two field studies on basketball free-throw shooting (FTS), we compared routine imagery, with “progressive” imagery, in which sessions started with imagery of the skill, then context was added, such as on court personnel, then broader context, such as audience, and finally game context, such as 10 seconds to go, successful FTS needed to win. Uniquely, we added “retrogressive” imagery, the reverse of progressive. In both studies, for these three conditions, along with a control condition, we measured FTS performance and self-efficacy. In the first study, the sample comprised 60 limited skill, competitive basketballers (lower divisions). We found the retrogressive condition improved performance and increased self-efficacy most, then the routine, while the progressive was little better than the control condition. In the second study, the sample was 49 highly-skilled players, from upper divisions. Here, progressive imagery produced the largest improvement in FTS performance and self-efficacy, then routine, then retrogressive, with little or no improvement in the control condition. Thus, it appears that basketballers still learning the FTS skill benefitted most from imagery showing the whole FTS context, then removing elements of context to leave the basic skill (retrogressive), whereas skilled players benefitted most from progressive imagery, starting with imagery of the skill and adding competition context elements in stages. To test this in real-world competition, we conducted a single-case design (SCD) study of progressive imagery with FTS of 5 highly-skilled basketballers over a whole season. Compared with the no imagery baseline phase, performance and self-efficacy improved for all players during the three imagery intervention phases, each lasting 4-6 games. These findings suggest that, often, routine imagery might not be the most effective approach. Progressive or retrogressive imagery could be most effective in specific contexts. Further study is required across sports and skill levels to determine whether these findings have universal application. We discuss theoretical and methodological issues raised by this research.

KEYWORDS

Routine imagery; progressive imagery; retrogressive imagery; skill level

Effects of future progression hypnosis training on flow state and putting performance with highly-skilled golfers in competition

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ABSTRACT

In our two previous hypnosis field studies, one showed Traditional hypnosis was superior to Neutral hypnosis, the other revealed that Future Progression (FP) was superior to Regression trancework. However, putting performance and intensity of flow may be affected differently during competitive rounds of golf, where opponents, play partners, perceived importance of the event, and officials, weather and condition of the greens can all affect golfers' performance. This study comprised an ecologically-valid examination of the effects of a FP hypnosis intervention on global flow state, flow state dimensions, and putting performance. Analysis of the effects of hypnosis on the nine flow dimensions was an original aspect of this study to understand how hypnosis changes flow state and affects performance in actual competition settings. Three highly-skilled golfers played one round of club competition golf every week over a 12-week period. The first author followed them to measure their putting scores on course. The first six weeks are the baseline phase (BP) and the last six weeks are the intervention phase (IP). The intervention included three one-on-one hypnosis sessions in conjunction with four self-managed hypnosis sessions using a FP hypnotic script. We employed a single-case design (SCD) to examine the influence of FP hypnosis on putting performance (number of putts per round, percentage distance errors, strokes gained putting) and the nine flow dimensions. To compare the differences between BP and IP, we applied visual analysis and the split-middle technique mode of analysis. We conducted post intervention social validation interviews. The three golfers showed improvement in number of putts holed and two out of three golfers improved their strokes gained putting from the BP to the IP. Two golfers also increased their global flow state score in the IP compared to the BP. Results indicated that FP increased flow state through the action-awareness merging, total concentration, sense of control, and autotelic experience flow state dimensions. FP also improved the number of putts per round and the strokes gained putting score. Results support the proposition that hypnosis can enhance global flow state and performance, although the mechanisms through which hypnosis affects global flow state and performance are inconclusive at this time. This study provides insights into a range of possible directions for further research to find the most effective ways to deliver hypnosis training in target sports like golf, which should enhance understanding of how to increase flow state and self-paced performance in sport.

KEYWORDS

hypnosis; flow; golf performance; time transformation; future progression

Examining a new protocol for imagery dose-response research on sport performance

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ABSTRACT

Imagery is an effective psychological skill that sport psychologists apply to enhance sports performance. Researchers have examined whether using imagery is beneficial for skill learning and enhancing mental states in sport. However, it is necessary to examine variables crucial for delivering imagery effectively. For example, imagery repetitions, duration of imagery sessions, and frequency of sessions per week are key imagery “dose” variables. Examination of protocols for identifying the most effective dosages is common in exercise training, and treatment in psychology and medicine. However, there is little or no research examining imagery dosages using dose-response protocols systematically. Hence, it is important to determine whether a new protocol of imagery dose-response relationships is useful in terms of the determination of effective imagery dosages for sport performance. In this project, we examined the same imagery dose-response protocol across three studies, in which we systematically manipulated one of the three imagery variables (repetitions, duration, frequency) in each study, while holding the other two variables constant. In all three studies, imagery lasted 4 weeks and the performance task was basketball free-throw shooting (FTS) accuracy. In Study 1, we examined the number of repetitions in a session; session duration and frequency (sessions per week) remained constant. For Study 2, we varied imagery duration in a session, while repetitions and frequency were held constant. Finally, in Study 3, frequency was manipulated, and the other two imagery variables remained constant. In all three studies, participants were volunteers of similar skill levels from local basketball teams. Participants were allocated to one of three imagery training conditions. They undertook 4-week imagery training programs with assigned imagery dosages and their usual basketball training. In the control condition, players maintained their usual basketball training. The FTS test was conducted at pre-intervention, Weeks 1, 2, 3, 4, and follow-up in Week 5. We analyzed accuracy of FTS by using 2-way mixed design ANOVA, that is, 4 conditions (three imagery conditions and the control condition) x 6 occasions (repeated measures at pre-test, Weeks 1, 2, 3, 4, and follow-up test in Week 5). Results from the studies showed that 20 repetitions (vs 10, 30), 13-minute duration in a session (vs 8, 18) and 4-day frequency (vs 3, 5) were most effective for FTS accuracy at post-test and follow-up. Here we make recommendations for use of imagery dose-response protocols to determine the most effective levels of imagery dose variables for enhancing sport performance.

KEYWORDS

Imagery dose-response; imagery repetitions; imagery session duration; imagery frequency per week

Beyond performance: sport psychology support to the malaysian elite athletes - Part 1

Philip Chun Foong Lew

National Sports Institute of Malaysia

ABSTRACT

The objective of this symposium session is to present, explore and synthesize on the psychology approaches, applications and practices that are administered by the sport psychology practitioners of the National Sports Institute of Malaysia (ISN) in the country's high-performance sports industry. In paper 1 of this symposium, the introduction of a novel sport psychology approach with an emphasis on exploration and evaluation of the SHIFT performance framework on the athletes' performance and wellbeing will be presented. Paper 2 focuses on examining the Malaysian elite tenpin bowlers' perception of performance profiling and its impact on the bowlers' ability to cope and adaptation to stress. In paper 3, the author will be illustrating a study examining the quantity, error pattern, consistency of mental concentration and identifying the concentration level of the Paralympic Archery athletes. The focus of paper 4 is exploring the mental health of Malaysian athletes during the quarantine-based training camp through the Depression Anxiety Stress Scale (DASS-21) and the relevant coping strategies that were being implemented were identified through the Brief COPE Inventory. Paper 5 is on examining the use of heart rate variability (HRV) feedback on Malaysian Wushu Athletes' recovery status and psychological preparedness during normal training and simulation competition in the process of enhancing sporting performance. Finally, paper 6 focuses on understanding the influence of the sport psychology intervention training towards perceived stress by Malaysian table tennis athletes through a longitudinal study. All 6 papers provide an integrative mixture of practical applications and theoretical concept of the sport psychology support in Malaysia. With the national contingent preparing for the upcoming Tokyo 2020 Olympics, 2022 Commonwealth Games and 2022 Asian Games, sport psychology support will be an integral component provided by the ISN officers in supporting the athletes and coaches in their collective effort to achieve their athletic goals.

KEYWORDS

ISN; Malaysia; High Performance; Sport; Psychology

S.H.I.F.T. managing mindset, behaviour and emotion in high performance sports

Philip Chun Foong Lew

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ABSTRACT

A person's ability to manage the mindset, behaviour and emotion in sports and life would be a decisive factor in achieving performance excellence. It should be emphasized as preparation towards major championships, facing important life events and especially during the unprecedented Covid-19 pandemic and the occurrence of the lockdown / movement control that severely impacted the overall psychological status of every individuals. This presentation highlights the introduction of a novel sport psychology approach with an emphasis on exploration and evaluation of the SHIFT performance framework on the athletes' performance and wellbeing. Using the acronym of SHIFT in a quantitative approach (evaluation) through a customized designed evaluation tool and integrating the practice with qualitative approach (exploration) by listing down all the relevant qualities that correlate with the core components of Strength, Hope, Important, FearLess and Trust, the SHIFT framework identifies the rigidity and flexibility of individuals' in shifting the psychological qualities (PQ) towards a particular situation / condition in managing the psychological responses (PR) to optimize the outcome. Case studies of administering the SHIFT framework on the Olympic national sailing team in their preparation towards Tokyo 2020 and the national lawn bowling athletes towards their Gold medals pursuit in the upcoming 2022 Birmingham Commonwealth Games will be discussed and elaborated. The feedback obtained from the athletes who underwent the SHIFT's exploration and evaluation process identified that the relevant framework and exercises encouraged the implementation of mindset, emotional and behavioural management strategies in enhancing individualized and collective's performance and wellbeing. This simple yet informative approach promised to be beneficial in supporting the athletes to achieve peak performance in sport and maintaining optimal psychological wellbeing in life.

KEYWORDS

SHIFT; Mindset; Behaviour; Emotion; Sport

The comparison of malaysian elite tenpin bowlers' perception in performance profiling

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ABSTRACT

Performance profiling is an application of Kelly's Personal Construct Theory in sport psychology. Through the exploration, communication, reporting and facilitating processes, they help performer and sport psychologist to identify the most appropriated psychological intervention. The purpose of this study was to compare Malaysian elite tenpin bowlers' perception of performance profiling. This study employed the national elite ten pin bowling athletes (n = 12), who completed the

KEYWORDS

Elite; Bowlers; Tenpin Bowling; Self-awareness; Performance Profiling

questionnaire to determine their perceptions of the performance profiling. Bowlers were required to complete the questionnaire once a month for 11 months as monthly feedback were provided to the bowlers on their respective perceive rating. The results indicated that the bowlers managed to 1) raise their self-awareness, 2) set goals for themselves, 3) monitor and evaluate their sporting performance and 4) taking more responsibility for their development. It was also identified that the performance profiling showed improvements in bowlers' ability to cope and adapt with stress better.

Note: This abstract is presented as part of the General Symposium organized by the National Sports Institute of Malaysia (ISN), titled Beyond Performance: Sport Psychology Support to the Malaysian Elite Athletes, in exploring the sport psychology approaches, applications and practices implemented by the sport psychology officers in the country's high-performance sports industry. All six papers provide an integrative mixture of practical applications and theoretical concept of the sport psychology support in Malaysia. With the national contingent preparing for the upcoming Tokyo 2020 Olympics, 2022 Birmingham Commonwealth Games and 2022 Hangzhou Asian Games, sport psychology support will be an integral component provided by the ISN officers in supporting the athletes and coaches in their collective effort to achieve their athletic goals.

Cognitive component in paralympic archery: baseline analysis of concentration

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ABSTRACT

Concentration is the key factor for athletes whether to improve their skills in training or to succeed in sustaining high performance. It allows them to respond to their sport's relevant cues and demands thoroughly. This study was carried out to examine the quantity (total & net), error pattern and consistency of mental concentration apart from identifying the concentration level among the Paralympic Archery Team. A total of 7 Paralympic Archery athletes (Recurve, $n=3$; Compound, $n=4$), aged between 24 to 44 years old, were selected to participate in this study. To obtain the concentration baseline, the D2 Concentration Test was used within the time set for the athletes simultaneously. Results were categorized into consistency, percentage of error rate, net capacity, percentage of concentration and error pattern. The range of consistency factor was from 3 to 8 while percentage of error rate range from 5.63% to 75.29%. Furthermore, the highest score of net capacity is 295 from a male and lowest is 74 from a female. It was highlighted that a male athlete recorded the highest percentage of concentration with 95.32% and lowest percentage scored with 24.75% was observed from a female athlete. There were 3 types

KEYWORDS

Para Archery; Baseline; Concentration; Focus; Paralympic

of error pattern shown, which were from increase error to decrease error ($n = 2$; 2 male), decrease error to increase error ($n = 2$; 1 male, 1 female) and lastly, decrease error to decrease error ($n = 3$; 2 female, 1 male). It was concluded that most of them still have a hard time trying to focus on a task that may possibly affect their performance in competitions. Relevant suggestions of intervention will be carried out on the athletes to improve their focus.

Beyond performance: sport psychology support to the malaysian elite athletes - Part 2

Philip Chun Foong Lew

National Sports Institute of Malaysia

ABSTRACT

The objective of this symposium session is to present, explore and synthesize on the psychology approaches, applications and practices that are administered by the sport psychology practitioners of the National Sports Institute of Malaysia (ISN) in the country's high-performance sports industry. In paper 1 of this symposium, the introduction of a novel sport psychology approach with an emphasis on exploration and evaluation of the SHIFT performance framework on the athletes' performance and wellbeing will be presented. Paper 2 focuses on examining the Malaysian elite tenpin bowlers' perception of performance profiling and its impact on the bowlers' ability to cope and adaptation to stress. In paper 3, the author will be illustrating a study examining the quantity, error pattern, consistency of mental concentration and identifying the concentration level of the Paralympic Archery athletes. The focus of paper 4 is exploring the mental health of Malaysian athletes during the quarantine-based training camp through the Depression Anxiety Stress Scale (DASS-21) and the relevant coping strategies that were being implemented were identified through the Brief COPE Inventory. Paper 5 is on examining the use of heart rate variability (HRV) feedback on Malaysian Wushu Athletes' recovery status and psychological preparedness during normal training and simulation competition in the process of enhancing sporting performance. Finally, paper 6 focuses on understanding the influence of the sport psychology intervention training towards perceived stress by Malaysian table tennis athletes through a longitudinal study. All 6 papers provide an integrative mixture of practical applications and theoretical concept of the sport psychology support in Malaysia. With the national contingent preparing for the upcoming Tokyo 2020 Olympics, 2022 Commonwealth Games and 2022 Asian Games, sport psychology support will be an integral component provided by the ISN officers in supporting the athletes and coaches in their collective effort to achieve their athletic goals.

KEYWORDS

ISN; Malaysia; High Performance; Sport; Psychology

Athletes' mental health & coping strategies during COVID-19 pandemic quarantine training camp

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ABSTRACT

The COVID-19 pandemic has affected many sectors globally, including sport. Fitness detraining, the uncertainty of the future, cancelling and postponing of sporting event were among the impact on sport industry. Following this, the National Sports Council of Malaysia has conducted a quarantine-based training camp to ensure the continuation of athletes' sport-specific training. This approach has been taken to minimize the risk of COVID-19 transmission among athletes and coaches. During this quarantine camp, athletes have been isolated from society, and their movement has been severely restricted. The social isolation and lack of ability to directly engage with the family may affect athletes' mental health. Therefore, the aim of this study is to explore the mental health of Malaysian athletes during quarantine camp and the coping strategies that have been applied. In this study, the athletes' mental health was assessed using Depression Anxiety Stress Scale (DASS-21), and coping strategies were determined using the Brief COPE Inventory. Note: This abstract is presented as part of the General Symposium organized by the National Sports Institute of Malaysia (ISN), titled Beyond Performance: Sport Psychology Support to the Malaysian Elite Athletes, in exploring the sport psychology approaches, applications and practices implemented by the sport psychology officers in the country's high-performance sports industry. All six papers provide an integrative mixture of practical applications and theoretical concept of the sport psychology support in Malaysia. With the national contingent preparing for the upcoming Tokyo 2020 Olympics, 2022 Birmingham Commonwealth Games and 2022 Hangzhou Asian Games, sport psychology support will be an integral component provided by the ISN officers in supporting the athletes and coaches in their collective effort to achieve their athletic goals.

KEYWORDS

Mental Health; Coping Strategies; DASS-21

Heart rate variability feedback effects on malaysian wushu athletes' recovery status and psychological preparedness towards competition during COVID-19 pandemic

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ABSTRACT

The athletes are not able to compete in any competition since 2020 due to the outbreak of Covid-19 pandemic. However, they will need

KEYWORDS

HRV; Recovery Status; Psychological Preparedness

to continue to sharpen their skillset and prepared themselves physically and psychologically for the upcoming competition even the current challenging situation. Heart Rate Variability (HRV) is one of the most common physiological tools to monitor athlete's recovery. Several studies had suggested that HRV feedback have effect on athletes' self-regulating physiological responses and this would lead to increase in psychological preparedness, which could further affect their sporting performance. Thus, the aim of this study was to examine the use of HRV feedback on Malaysian Wushu Athletes' recovery status and psychological preparedness during normal training and simulation competition. Seventeen wushu athletes (male = 9, female = 8) are included in this study. Polar team 2 gadget will be used to collect the athletes' heart rate data prior and during normal training, and prior and during the simulation competition. Besides that, athletes are required to rate their own anxiety level, self-perceived recovery status before the training and competition, then rate their sporting performance after the training or simulation competition session. The data collected will then be analyzed and discussed. This study hypothesized that HRV feedback has a significant effect on the athletes' recovery status and psychological preparedness. Besides that, there will be a significant correlation between the emotional states and psycho-physiological states before normal training as well as before simulation competition. This study is important and valuable to help the sport psychologist to determine and monitor the recovery process and the psychological preparedness of the athletes not only during the pandemic period but undeniably important during the athletes' first competition post pandemic. Furthermore, the usage of HRV feedback may improve their self-regulating physiological responses, which will lead to increase in psychological preparedness, in turn enhance their sporting performance.

The influence of intervention program on athlete's perceived stress

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ABSTRACT

Performing in sports training could lead to a stressful event for the athletes due to the demands of the training and thus the athletes are subject to increased perceived stress. Many well-documented studies had used the perceived stress scale in a cross-sectional study to assess the degree of perceived stress situation among the athletes. The purpose of this study was to examine the influence of the intervention training towards perceived stress by athletes in a longitudinal study. Twelve Malaysia table tennis athletes consisted of male (N = 5) and female (N = 7), aged 14 to 16 years old (Mage = 15.33 ± 0.88 years old) participated in the study. All the athletes received intervention training consisted of

KEYWORDS

Perceived Stress; Emotion Regulation; Sport; Table Tennis

three sessions over a 3-month period. Results show that the intervention had a partially positive effect on the athlete's perceived stress over the 3 month-period and female athlete's score improve better than male athletes. In conclusion, the study demonstrates it is possible to enhance the athlete's emotion regulations with intervention training to help athletes to perceived stress better. Note: This abstract is presented as part of the General Symposium organized by the National Sports Institute of Malaysia (ISN), titled Beyond Performance: Sport Psychology Support to the Malaysian Elite Athletes, in exploring the sport psychology approaches, applications and practices implemented by the sport psychology officers in the country's high-performance sports industry. All six papers provide an integrative mixture of practical applications and theoretical concept of the sport psychology support in Malaysia. With the national contingent preparing for the upcoming Tokyo 2020 Olympics, 2022 Birmingham Commonwealth Games and 2022 Hangzhou Asian Games, sport psychology support will be an integral component provided by the ISN officers in supporting the athletes and coaches in their collective effort to achieve their athletic goals.

Biofeedback training as an integral part of psychological preparation within the training process

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ABSTRACT

Biofeedback training is a technique used for gaining control of self-regulation, based on information or feedback received from an athlete's body and mind. There are substantial reasons for successfully using biofeedback training as part of an athlete's psychological preparation. First, biofeedback training, like physical training, is based on the educational approach, which includes clear training goals, a varied collection of psychological strategies and exercises as training means, a plan and structure for training sessions in which improvement can be observed, and transference of learned skills to the field. Second, psychophysiological monitoring of an athlete's emotional state represents an objective source of information. Finally, using psychophysiological measurement can promote an understanding of the athlete's brain and the complexity of sport performance (Blumenstein and Orbach 2014a; Collins and McPherson 2006; Zaichkowsky 2009). Today biofeedback training is used in research and practical programs as an integral component of psychological skills training in a variety of sport disciplines, such as archery, soccer, swimming, wind surfing, etc. In the next three sessions the use of biofeedback within the psychological preparation of an athlete will be introduced. In the first session, the newly developed model, the Five-Stage PST (i.e., psychological skills training) model will be presented. This model

KEYWORDS

Biofeedback training; The-5-Stage-PST model; decision making skills; self-treatment program

integrates biofeedback training (i.e., BFT) with other psychological strategies in one intervention package and it will be discussed while presenting research data from the COVID 19 period. In the second session, the idea of using biofeedback (BFB) during decision-making (DM) training can help players regulate arousal and emotions and stay focused throughout the DM process. Finally, in the last session, an investigation of the efficiency of self-treatment program to enhance both psychological and performance parameters using biofeedback among athletes will be presented. To summarize, BFT is an objective method which demonstrates flexibility, objectivity, and stability through the various challenges the athlete face on his/her road to success.

Biofeedback training as part of the five-stage PST model

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ABSTRACT

The Five-Stage PST (i.e., psychological skills training) model integrates biofeedback training (i.e., BFT) with other psychological strategies in one intervention package. The innovation of this program is the incorporation of mental skills into the athlete's/team's training based on the periodization principle. Throughout the training program, psychological skills are learned and practiced, becoming more specific to the sport and the athletes'/teams' practice. The purpose of this study is to examine the effectiveness and usefulness of the new "Five-Stage PST Model" for a youth basketball team and female youth basketball players before and during the COVID 19 period. This program includes the following stages: Introduction, Learning, Modification, Application, and Final. BFT was part of this PST program and was incorporated into the preparation, competition, and transition phases of their training and lasted for one year. The process is usually accompanied by biofeedback (BFB) control pertaining to heart rate, electromyography, and electrodermal activity/galvanic skin response (GSR). Moreover, basic psychological strategies are learned and practiced according to a stress distraction scale developed from our work with BFT in various sport disciplines at a variety of athlete levels. Most of the meetings used the ZOOM application and other digital services. It was challenging to provide psychological support for dealing with anxiety and depression using on-line means. A major challenge was to maintain motivation for training, especially since the players were used to practicing as a team and not as individuals. Twelve female basketball players (aged 16–18) participated in this study. A general framework, together with a description of specific psychological sessions based on the Five-Stage PST Model, are discussed. The main finding of the current study revealed that application of the model led to improved performance by the team and the individual players. In addition to working with the players, special attention was given to the coaching staff, the

KEYWORDS

Five-Stage PST Model; Biofeedback Training; COVID 19; female youth basketball player

medical/administration staff, and parents during the COVID 19 crisis. BFT is part of Five-Stage PST Model, demonstrated flexibility and stability through the unexpected challenging period of COVID 19.

Integrating biofeedback in decision-making training

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ABSTRACT

Expert players possess advanced decision-making (DM) skills. These skills allow them to anticipate developing plays quickly and accurately, generate plausible options of play and choose an effective action at the optimal temporal point (Basevitch et al., 2020). The occlusion paradigm, temporal and spatial, has been used extensively to train DM skills (Ward et al., 2009). Specifically, players need to anticipate, generate options and make decisions while watching videos of developing plays stopped at various points before an action is made (i.e., temporal) or with various parts of the environment (e.g., player's arms) occluded (i.e., spatial). This allows players to improve their DM skills, by focusing on the most important cues at different temporal points, while using problem solving techniques. Furthermore, anxiety, arousal and attention effect DM skills and can lead to decreased performance (Tenenbaum et al., 2015). Specifically, if attention is limited because of anxiety or distractions, the DM process will be affected and there will be a higher chance of making a non-optimal or even a poor decision. Thus, using biofeedback (BFB) during DM training can help players regulate arousal and emotions and stay focused throughout the DM process. Furthermore, combining psychological skills training (PST), such as dealing with distractions and regulating arousal levels, together with biofeedback technology can improve the DM training process. In addition, measuring arousal levels using BFB while performing DM tasks provides valuable information that can guide training and PST intervention. The presentation provides a theoretical overview of DM skills and training, BFB measurement and training methods and effective PST techniques that can be used during DM training. In addition, a model describing the implementation of BFB and PST in DM training will be presented, highlighting methods of gradually manipulating cognitive load, pressure and arousal during the DM training.

KEYWORDS

Decision-making;
biofeedback; mental skills;
occlusion paradigm

The effects of self-mental training on psychological and performance parameters among athletes

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ABSTRACT

During the past years various studies examined the effects of mental training on psychological and performance parameters among athletes. Those studies represented the idea that mental training can increase the probability to perform efficiently as well as the ability to cope psychologically in an adaptive way. Unfortunately, in many cases, due to a shortage of time and resources, the mental support needed by an athlete is not always provided satisfactorily. Therefore, in the present study the efficiency of self-treatment program to enhance both psychological and performance parameters among athletes was investigated. Participants were 20 athletes from several sport disciplines: Gymnastics, martial-arts, volleyball, table tennis, basketball, and street workout. The intervention program included an 8-week self-mental training that contained two phases: (1) Mental technique (i.e., self-talk/relaxation/imagery/breathing/music), and (2) Mental technique with biofeedback. The goal was to investigate the effects of these mental techniques on anxiety, mood and energy levels, as well as performance levels. Self-report measurements were used to examine the psychological aspects and stopwatch exercise was used to examine performance accuracy. The psychological and performance parameters were conducted 3 times: (1) Pre training, (2) During training (i.e., after 4 weeks), and (3) Post training. Results are discussed in 2 structures: (1) Pre-post effects according to self-mental training in general and, (2) Pre-post effects for specific technique (i.e., with or without biofeedback). A significant decrease in anxiety levels was found for all kinds of mental techniques with and without biofeedback. In addition, a significant increase in galvanic skin response that yielded a decrease in arousal parameters was found. Lastly, a significant increase in mood and energy parameters for all types of mental techniques besides of music was found. However, music was the only mental technique that significantly improved performance levels. In conclusion, self-mental training can be used as an effective support that may correlate with enhancement in psychological and performance parameters. The role of the sport psychology consultant as a provider for self-mental training will be discussed.

KEYWORDS

Biofeedback; self-treatment; mental training

Mental training through psychophysiology instruments in Thailand

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ABSTRACT

Due to new digital techniques and the COVID-19 pandemic, psychological training and elite competitive athletes have been directly affected. However, the pandemic has driven us to change the way we train people, and there is more psychological negative intensity during training. In terms of technology

KEYWORDS

Mental Training;
Psychophysiology; Thailand;
Pandemics

development, athletes and coaches expect more concrete evidence and safer environments for mental training during their consultation and PST practice to enhance their performance. During the last few years of training for international competition for Thai athletes, psychologists in Thailand have employed new technological equipment to work with athletes in either face-to-face or remote training. Instruments like biofeedback and neurofeedback are being used as part of our training. Our sport psychologists from the universities and Sport Authority of Thailand have worked and done research, as well as training athletes, during this crucial and important time prior to the Olympic Games and regional SEA games. Therefore, this symposium will include 3 papers sharing the authors research and experiences with our elite athletes. The papers will provide information on able-bodied and disabled athletes in different kinds of sport including golf, canoe slalom, shooting and archery. They will also show how they work and integrate those regular consultations and neuro and bio-feedback to help strengthen the psychological aspect of their performance during this pandemic period. During this crisis, that has globally affected our athletes and all people associated with the athletes, there is an opportunity to adapt ourselves to survive inside and outside the sports arena. Adaptation and survival during this global crisis is not only involves the public at large, it also involves elite athletes with high aims and goal.

Integrating psychophysiological training into sport psychology consulting process

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ABSTRACT

The present article outlines the implementation of a psychological skills training program integrating psychophysiological training into sport psychology consulting for youth and professional golfers. The method is a combination of mindfulness training programs divided into 4 types of training categories such as quiet seated meditation and awareness of breathing. Meditate for 5-10 minutes (before bedtime, when waking up, and before the match or training session) with mindfulness of true consciousness at the moment. Focus on your surroundings, your breath, and your physical senses, and acceptance between matches and daily training. In addition, they come for consultation with the sport psychology service one time per week. They train on a golf driving range and use mindfulness combined with neurofeedback training and psychophysiology tools. The measurements are the meditation and mindfulness program, neurofeedback (focus band brain sensing headset with free app) for assessing brain frequency, and psychophysiology (fingertip pulse oximeter) to check heart rate and oxygen saturation to learn the recovery time. The player shows an improved performance in training. In

KEYWORDS

Psychophysio Training;
Neurofeedback; Consulting
Process; Golfer

competition, they have increased performance (decreased number of errors, and decreased number of bogies or double bogies) and achieved success in several tournaments. Moreover, they display significant experience for getting in a zone (flow state) and feel positive interaction with their parents. For their part, the family feels satisfied with their emotional control and fight. The value of the program: Sport psychology training with Applied Psychophysiology and Neurofeedback (APN) is beneficial for helping the athlete learn how to modulate physiological activity for maximal performance as well as optimal recovery. Highlights of the method: This technique shows the link of the mind-body connection. Sport psychology is working to solve problems and satisfy the parents' needs by means of self-regulation of emotions during performance.

Neurofeedback training for mental performance in Thai paralympic athletes

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ABSTRACT

Improving mental performance is an important key component in helping athletes with disabilities to perform peak performance in the Paralympic Games. In practice, neurofeedback principle is used to enhance concentration, mindfulness, flow state, relaxation, focus and reduce anxiety for the shooter and archer Thai Paralympic team. Specifically, using the focusband, a headband - like portable electroencephalogram technology tool were the main employ to reach our purpose. The focusband headset and application provides neurofeedback. This is a proven method to train our brain to function sufficiently. It allows athletes to experience the optimal desired brainwave state using audible and visual feedback. In detail, 3 silver oxide sensors and 2 channel EEG System are included. With the Bluetooth device, transmits real-time signals to applications on the smartphone or tablet. In order for athletes to see their own brain activity, divided assess right - brain behavior (Imagination, holistic thinking, intuition, arts, rhythm, nonverbal cues, feelings visualization and daydreaming) using green display and left - brain behavior (logic, sequencing, linear thinking, mathematics, facts and thinking in words) red display (Mode Avatar). This protocol has been done in combination with breathing control skills technique. Our athletes regularly practice with an application in the software (Mode Breathing) for 20 minutes a day, 3 days a week, for 4 months. Based on our observation by sport psychologist and coaches, there were satisfaction on its effectiveness and the performance improvement during this period of training. They have the ability to shoot with greater accuracy. Therefore, the training approach is presented from the beginning until the Paralympic game qualification period. As a result, it should be a great model for using or practicing with other sports and at any countries.

KEYWORDS

Neurofeedback Training;
Mental Performance; Thai;
Paralympic Athletes

The effect of heart rate variability biofeedback training on performance of canoe slalom athletes

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ABSTRACT

Canoe Slalom is an Olympic sport held on natural and artificial rivers, characterized by its differences when compared to other sports. This sport is divided into single Kayak (K1), single canoe (C1). It is widely accepted that in the development of canoe slalom performance, a wide variety of knowledge must be integrated, including the application of sports psychology in team preparation. This element of excellence, combining psychological strength, gives athletes mentally prepared to play an advantage in both training and competition. In high-level athletes, anxiety and alertness affect athletes' performance and decision-making abilities. Maintaining optimal anxiety and arousal levels can be an important psychological strategy for improving physical reactions and the ability to make effective decisions. This is because mental pressure can lead to distraction and making errors in sports. In addition, heart rate variability is the amount of time changes between each heartbeat that related to systematic nerve and parasympathetic system. This change is due to body and external environment. The greater variability is the more reediness of athletes to perform. Heart rate variability biofeedback training (HRV biofeedback), coupled with athletic breathing control, is a chosen strategy for sports psychologists to develop periodic heart rate variability (HRV) 8 months continuously to 6 Thai national teams to allow athletes to maintain optimal levels of anxiety and alertness, and leads to more concentration for practice and competition. This technique creates a variation in HRV that are used to regulate their optimal psychological status to the team members. This presentation will share our approach from the beginning of the training cycle until the Olympic qualifying competition. It should therefore be a good model to apply to other sports or in other countries.

KEYWORDS

Heart Rate Variability; Heart Rate Variability Biofeedback; Training

The use of psychological techniques to enhance performance of paralympic athletes in Thailand

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ABSTRACT

The objective of this qualitative research was to explore the use of psychological techniques to enhance the performance of Paralympic athletes in Thailand. The participants were obtained by purposive sampling methods, four sports psychologists for the Thai Paralympic sports team who have signed a consent form and provided information to serve the purpose of the study. These sport psychologists have been assigned to work with this athlete group and worked with them for more than three months. Data were collected using observational methods, semi-structured interviews, where interviews were made with a participant and audio recordings were recorded during the conversation for verbatim transcription of the interview, and descriptions of important events. The data were analyzed by comparing the data stability. To find themes related to the use of psychological skills and to verify the reliability of the information, this research utilized a triangulation method. The results of the qualitative study indicate that psychological skills that can be used to develop the abilities of Thai Paralympic disabled athletes include: 1) goal setting, where sports psychologists discuss goals with the athletes to clarify their goals better, 2) breathing control, athletes were advised to employ slow and long breath when they are feeling stressed or anxious during training or competitive sports. 3) self-talk, this technique is to gain and regain their efficacy level and 4) creating a pre-shot routine respectively. In addition, biofeedback techniques are also used by sports psychologists in conjunction with other techniques in Thai Paralympic athletes. However, the challenge of sports psychologists is that those involved in sports teams do not understand and realize the importance of the process of sports psychological skill training.

KEYWORDS

Psychological Techniques; Biofeedback; Paralympic Athletes; Thailand

Psychological preparation for performance enhancement of Thai paralympic athletes

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ABSTRACT

Even though Thai world class athletes have been well accepted from their high performance, athletes with disabilities have now received more attention as well from the sports authorities in Thailand due to the medal opportunities at the world level, Olympic and World Championships. With such new attention and chances of success, there are more sponsors and budget to help these athletes to fulfill their goals. Beside their traditional physical and skill training, the psychology aspect of their performance has also been recognized and included during their training sessions and competition. Some of our Thai sport psychologists have worked with this group of athletes for a few years on different sports (e.g., table tennis, volleyball, athletes in disabled rowing,

KEYWORDS

Psychological preparation; Performance Enhancement; Paralympic; Thailand

wheelchair tennis players, and disabled athletics (Track and Field), genders and experience levels (high and low). From our psychologists' observation through training and research, this presentation will provide useful information for future development and models for other psychologists working with this group of athletes. In addition, this symposium will include a psychological profile among these athletes as well as their motivation types (intrinsic and extrinsic) that leads them to continue training and competition. Psychological techniques (e.g., goal setting, breathing control, self-talk and creating a pre-shot routine) and coping psychological techniques will also be shared to show how and what they use and apply these skills for their performance enhancement. Coping skill techniques for stress management used among these athletes will also explore through this review. This symposium will then be a good combination of knowledge that displays the whole picture when working with disabled athletes and answer questions regarding the psychological aspect of performance. We also provide some information and recommendations upon the implications of the techniques.

The psychological performance profiles of thai paralympic athletes

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ABSTRACT

Who are trained and will be a representative for our national Paralympic athletes' member? The purpose of this research was to study the psychological performance profiles of Thai Paralympic Athletes. A total of 39 athletes provided details for this evaluation. These athletes were from different sports training for Paralympic qualifying competition. There were 13 athletes from athletics (track and field), 12 from skeet shooting, 7 from table tennis, 5 from swimming, and 2 from tennis. There are two evaluation instruments used for this study. First one is an Evaluation of Peak Performance Profile (PPP) with 13 questions ($r = .74$). This is a 5 rating scale-type where 1 means never and 5 means always of 3 subscales, i.e., concentration, stress control and confidence. The second questionnaire is the Test of Performance Strategies (TOPS) which include 61 questions ($r = .95$). This 5 rating scale-type questionnaire asked the subject's feeling on psychological strategies used e.g., goal-setting, automaticity, emotional control, imagery, activation, self-talk, relaxation and negative thinking from never (1) to always (5). This

KEYWORDS

Peak Performance Profile; Test of Performance Strategies; Thai; Paralympic Athletes

questionnaire was used during practice and competition except negative thinking is replaced by attentional control). The analysis from peak performance profile of Thai Paralympic questionnaire indicated that Thai Paralympic athletes showed the highest levels on confidence, followed by stress control and concentration respectively. The results of their performance strategies used during training showed the strategies used were self-talk, goal setting and emotional control respectively. For the competition sessions analysis, we found a similar result to the training sessions that Thai Paralympic athletes employed self-talk, goal setting and emotional control respectively. This finding confirms that psychological skill training techniques used among Thai disabled athletes are similar to able-bodied athletes.

A comparison of the intrinsic and extrinsic motivation of thai paralympic athletes with different competitive experiences

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ABSTRACT

The purpose of this research was to compare an intrinsic and extrinsic motivation of Thai Paralympic athletes with different competitive experiences. This research included 53 participants which consisted of 39 males and 14 females, aged between 17-63 years old (Mean = 32.22 ± 11.10). They were 16 athletes from table tennis, 14 from shooting, 9 from wheelchair tennis, 7 from rowing and 7 from swimming. Participants were divided into 2 groups: low competitive experience group (n = 17) and high competitive experience group (n = 36). The 30 items Motivation in Sport Questionnaire: MSQ (Pithapornchaikul, 2006) was used for data collection purposes concerning the intrinsic and extrinsic motivation of Thai Paralympic athletes with $r = .92$. This 5 rating scale-type questionnaire are from the highest (5), high (4), moderate (3), low (2) and the lowest (1). The data was then analyzed using mean, standard deviation and independent t-test for comparison of competitive experience. The result indicated that Thai Paralympic athletes have both high level of intrinsic (Mean = 4.34 ± 0.80) and extrinsic motivation (Mean = 4.03 ± 0.94). When comparing the groups, the intrinsic motivation in high competitive experience group (Mean = 4.45 ± 0.30) were higher than low competitive experience group (Mean = 4.10 ± 0.13) with statistically significant at the .05 level. However, when compared with the extrinsic motivation, no significant difference was found. The study concluded that athletes with high competitive experience were more internally motivated than athletes with low competitive experience. The implication of this finding is that in order to obtain more successful athletes, intrinsic motivation build should be a part of training purpose of athletes and coaches.

KEYWORDS

Intrinsic Motivation; Extrinsic Motivation; Difference in Competitive Experience

The coping skills in thai national athletes with physical disabilities

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ABSTRACT

The able-bodied and disabled athletes have been questioned if any different while playing sport. More specifically, how they cope and perform under anxious circumstances. The purpose of this research was to study the coping skills employed among Thai national athletes with physical disabilities, by gender and types of sport (individual and team sports). There were a total of 40 disabled athletes which included 12 table tennis players, 12 volleyball players, 4 athletes in disabled rowing, 9 wheelchair tennis players, and 3 disabled athletics (Track and Field). They were purposively selected as the research project subjects. The research tool was Sports Stress Management Skills (SSMS) questionnaire (Thai version) validated by Supatcharin Khemarat (2014) with reliability of .87). This 4 rating scale-type questionnaire are from the very often (4), often (3), rare (2), and very rare (1) includes 7 mental skills (e.g., the coping skills, coping with adversity) identifying what coping skill level they have employed for stress management during their sports participation. The data was analyzed using means and standard deviation. A paired t-test was used to compare sports stress management skills by classification of gender and types of sports. From the analysis of obtained data, the results were as follows: The Thai national teams are good at all 7 skills levels. By comparison of purpose it was found that both individual and team sports were found statistically significantly different in concentration and goal setting and preparation ($p < .05$). In conclusion, Thai national athletes with in mobility disabilities teams have good sports stress management skills and team sports have a higher level of their coping skills than individual ones. Therefore, there must be continued promotion and development of mental skills for individual sport athletes.

KEYWORDS

Coping Skills; Thai National Athletes; Physical Disabilities; Sport Stress management

Experience and gender differences on the basic psychological needs of thai paralympic athletes

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ABSTRACT

This research aims to study and compare years of competitive experience and gender differences in the basic psychological needs of Thai Paralympic athletes. The sample used in this study were 31 Thai Paralympic athletes (20 males, 11 females). Their years of experience range are from 2 to 5 years (\bar{x} = 4.48, SD = 1.58). The instrument used for data collection was a 20 item Thai version questionnaire on Basic Psychological Needs (Thongprasert, 2013) with .92 reliability value. This 7 Likert scale type questionnaire include 3 subscales asking the feeling of athletes' basic psychological needs ranged from 1 (inaccurate) to 7 (the most accurate). These 3 sub-scales included 1) the perceived ability, 2) the perception of independent decision and 3) the perception of interacting with other people. From the data analysis, results indicated that 1) an average basic psychological need levels were the competence (\bar{x} = 4.71, SD = 1.33), autonomy (\bar{x} = 4.53, SD = 1.26) and the relatedness (\bar{x} = 4.47, SD = 1.35), 2) the difference between years of competitive experiences showed that with 5 years' experience athletes had a higher level of basic psychological needs than less experienced group in all categories, competence (\bar{x} = 4.84, SD = 1.42), the autonomy (\bar{x} = 4.71, SD = 1.64) and the relatedness (\bar{x} = 4.55, SD = 1.18). The gender comparison between Thai Paralympic athletes found that male athletes on competence and autonomy are higher than female athletes while Thai Paralympic female athletes were higher than males on relatedness. This finding is to provide information and to understand the basic psychological need among these special group of athletes. Gender and years of experience are need to be considered while working with disable athletes.

KEYWORDS

Basic Psychological Needs; Thai; Paralympic Athletes; Gender Differences

From conceptualization to application: self-compassion to promote well-being in sport

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ABSTRACT

Well-being includes the presence of positive feelings, and the positive functioning in community and individual life (Lamers et al., 2011). The sport psychology community considers well-being a priority goal throughout an athletic career and beyond (see Vella et al., 2021). In this symposium, we focus on the contribution of self-compassion on athletes and coaches' well-being. Self-compassion describes a kind, connected, and supportive attitude towards oneself and has three facets: self-kindness, common humanity, and mindfulness (Neff, 2003a, 2003b). Self-kindness means treating oneself with kindness and understanding (even when feeling inadequate), wishing for one's own well-being, and adopting an accepting, non-judgmental attitude toward oneself rather than engaging in harsh self-

KEYWORDS

athletes; coaches; mental health; compassion

criticism or judgment. Common humanity refers to an awareness that unpleasant experiences are shared by all human beings rather than feeling unique and isolated after a failure. Mindfulness is a conscious awareness of one's own suffering, including psychological pain, and taking a balanced approach to negative experiences so that painful feelings are neither avoided nor dramatized. Data from the general population show that self-compassion is associated with greater well-being (Zessin et al., 2015), and research with athlete populations supports the positive association of self-compassion with well-being (Ferguson et al., 2014). A growing body of research suggests self-compassion may support healthy and successful sport experiences (see Mosewich et al., 2019 and Röthlin et al., 2019 for reviews). Our symposium consists of three contributions and a discussant, with the aim to expose the audience to foundational conceptualizations and findings of self-compassion, new research furthering our understanding, and frontiers for application and next steps. The first contribution will focus on the definition and conceptualization of self-compassion in sport psychology alongside a general overview of the literature to date on the topic of self-compassion in sport, with a particular focus on the well-being of athletes. The second contribution will address and discuss self-compassion as a key strategy to support well-being among high performance coaches. The third contribution presents results from a smart phone study that investigates the role of self-compassion during sport-specific stress with regard to the negative self-conscious emotions shame and guilt. The discussant will position dialogue around further intervention, promotion, and empirical work.

A brief primer on what we know currently about self-compassion in sport

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ABSTRACT

Self-compassion was brought into the general psychology literature close to the turn of the century (see Neff, 2003a, 2003b), and the construct was later applied in sport psychology research (Mosewich et al., 2011). Given the demanding and evaluative nature of competitive sport, which can result in maladaptive emotions, cognitions, and behaviours, researchers have explored self-compassion as a resource for athletes to manage their difficult sport experiences. The purpose of this presentation is to: (a) define self-compassion and consider how it is conceptualized in sport psychology research, and (b) provide a general overview of the self-compassion in sport literature to date, with a particular focus on athletes' well-being. Self-compassion is a multidimensional construct centered on treating oneself with kindness, connectedness, and understanding through increased compassionate self-responding (i.e., self-

KEYWORDS

Sport psychology; athletes; self-attitude; psychological skills

kindness, common humanity, mindfulness) and reduced uncompassionate self-responding (i.e., self-judgment, isolation, over-identification; Neff, 2020). While originally conceptualized as trait-like (Neff, 2003a), researchers have examined self-compassion's malleability in the sport context through brief inductions and applied interventions (Leary et al., 2007; Mosewich et al., 2013; Reis et al., 2015; Voelker et al., 2019), suggesting state-like qualities of the construct. Despite some incongruency in the sport psychology literature, self-compassion is, at least currently, often conceptualized as a resource or collection of skills, with the recent development of a state-specific measure of self-compassion supporting this position (Neff et al., 2021). Interest in the application of self-compassion to the sport domain has grown substantially over the past decade, and researchers have identified a number of correlates that represent well-being. In general, athletes with greater levels of self-compassion tend to have more adaptive emotions, cognitions, and behaviours, and overall positive outcomes in sport (see R othlin et al., 2019). Research findings were initially contextualized primarily to women athletes' sport experiences, though researchers have expanded their focus to men athletes in recent years (e.g., Reis et al., 2019, in press). Coaches and other sport support personnel have been largely overlooked in the self-compassion literature, and researchers ought to consider applying self-compassion with more diverse athlete populations (e.g., non-binary gender, athletes with varying disabilities). Given the overwhelmingly encouraging research results, more research is needed to weave self-compassion into the fabric of sport.

Self-compassion – a key strategy to support mental health, well-being and sustainability among high-performance coaches

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ABSTRACT

Mental health and well-being in high performance sports recently has received increasing attention as reflected by numerous position statements (see Vella et al., 2021). These statements primarily focus on elite athletes, limiting attention and knowledge about mental health and well-being in the population of high-performance coaches (HPC). Interestingly, the research that focused on mental health issues in the population of HPC is limited to stress and burnout associated to competitive demands, work-home interference, job-insecurity, stigma and a high threshold prior to seeking help (Olusoga et al., 2019). In high performance sports, there is often a culture of suppressing emotional difficulties and hiding vulnerability. This can result in HPC having limited attention to their self-care, especially as they often prioritize the well-being of their athletes over their own

KEYWORDS

sport psychology;
psychological health; elite
sport; self-care

(Olusoga & Kenttä, 2017). In contrast to the suppression of symptoms of suffering and the avoidance of help-seeking, self-compassion is characterized by supportive attitudes and behaviors as well as an openness to all experiences, including painful ones (Neff, 2003). According to Neff (2003), taking care of one-self when suffering and acknowledging a sense of common humanity (i.e., self-compassion) is essential for well-being. Self-compassion, however, can be essential to more than just one's own well-being. It is plausible to assume that those who are able to develop compassion for themselves and care about their own well-being are also more likely to be able to care for others - a quality that seems particularly central to HPC. The overall purpose with this presentation is to critically address and discuss self-compassion as a key strategy to support mental health, well-being and sustainability among HPC based on lessons learned from theory and practice. Preliminary results will be presented from research that aimed to enhance sustainable mental health among HPC (Hägglund et al., in press). In this study, one coach reported: "I asked for help during the spring. I don't think I've done that before. Not like that, I asked for help because I felt that I couldn't do it anymore". This statement underlines that the topic of mental health and well-being is important not only for athletes but also for HPC. Interestingly and unexpectedly, a strength-based approach to vulnerability was developed during this line of research when HPC engaged in panel discussions (Hägglund et al., 2019). Finally, the contribution will discuss how practitioners may support the mental health and well-being of HPC.

Associations of self-compassion with shame and guilt after sport-specific daily stress – a smartphone study

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ABSTRACT

Competitive athletes regularly encounter small everyday sport-specific stressful events such as negative feedback or making simple mistakes in a training session (Benson & Bruner, 2018). When stress triggers an internal feedback process that concludes that a particular goal, expectation or standard is not being met, it can result in self-conscious emotions such as shame and guilt (Leary & Tangney, 2003). Shame can be particularly devastating as it arises from a negative assessment of the whole self (Dearing & Tangney, 2002). Accordingly, shame is associated with poorer well-being and lower self-esteem (Velotti et al., 2017). Guilt, on the other hand, arises when a specific behaviour is evaluated as a violation of perceived social norms, and therefore usually leads to more adaptive behaviour than shame (e.g., reparative behaviours, Dearing & Tangney, 2002). How people treat themselves in stressful moments influences what emotions they have in the process. One way of treating oneself in such stressful moments is by being supportive and compassionate (i.e., self-compassion,

KEYWORDS

self-compassion; ecological momentary assessment; diary study; self-conscious emotions

Neff, 2003a). Self-compassion reduces shame in socially anxious individuals (Cândeia & Szentágotai-Táatar, 2018) and is negatively related to shame in women athletes (Mosewich et al., 2011). Applying a diary study design, we investigated the role of self-compassion during sport-specific daily stress with regard to the negative self-conscious emotions shame and guilt. We hypothesized that self-compassion would protect athletes from certain self-conscious emotions, namely shame, after sport-specific stress. Ninety-six athletes (Mage = 22.14 years, SD = 5.92, 55% women, Mweeklytraining = 12.00 hours, SD = 5.59, 26 different sports, 39% team sports) reported, on their smartphones, their level of self-compassion and evaluated their experience of stress, guilt, and shame related to their training and competitions over a period of three weeks. Multilevel analyses showed that sport-specific stress was associated with more negative self-conscious emotions ($Bs > 0.39$, $ps < .001$). Moreover, self-compassion weakened the effect of sport-specific stress on shame ($B = -.21$, $p < .01$). Our study shows that even everyday situations that only trigger weak stress reactions were still associated with increased guilt and shame, and that self-compassion buffered the effect of stress on shame. Future studies could investigate the extent to which self-compassion interventions with athletes reduce shame reactions and whether this, in turn, leads to corresponding changes in well-being.

Where to go next? further embedding self-compassion in sport

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ABSTRACT

Self-compassion describes a kind, caring, and supportive attitude towards oneself (Neff, 2003a). The evidence supporting the potential of self-compassion to enhance well-being in the sport context continues to grow (see Mosewich et al., 2021). Conceptual underpinnings and key associations give rise to intervention and application, collectively increasing exposure of the construct to individuals involved in sport. The purpose of this final presentation is to briefly overview existing self-compassion interventions in sport, propose some next steps, and set the stage for a live discussion with symposium speakers and conference delegates regarding potential frameworks for integrating self-compassion into the sport domain. Self-compassion interventions have been conducted across a range of contexts and with diverse populations, exhibiting evidence of positive psychosocial outcomes (see Ferrari et al., 2019 for a review). The meta-analysis by Ferrari et al. (2019) shows that self-compassion-based interventions lead to moderate improvements in self-compassion, supporting the conceptualization of self-compassion as a modifiable construct that can be trained. Furthermore, self-compassion facilitates improvements in several

KEYWORDS

sport psychology;
intervention; mental skills
training; psychological skills
training; athlete mental
health

factors relevant to well-being, such as less rumination, stress, depression, and anxiety, and more positive affect, mindfulness, and life satisfaction (Ferrari et al., 2019). The unique demands of sport have given rise to intervention efforts tailored to women athletes (Mosewich et al., 2013; Voelker et al., 2019) and men athletes (Carraça et al., 2019). Applied practice also provides insight into the process of integrating self-compassion in sport (Baltzell, 2016; Rodriguez & Ebbeck, 2015). Along with empirical research, such applied work can help to inform best practice (Mosewich et al., 2019). For the promising developments pertaining to self-compassion intervention to continue we must emphasize systematic evaluation regarding intervention fidelity, efficacy, and effectiveness in different populations, sport contexts, and modalities, and consider factors such as timing, delivery, barriers, and facilitators (Mosewich et al., 2019). Importantly, we must also consider whether an approach should be one of widespread promotion or targeted intervention (Mosewich et al., 2019). While the scope has started to broaden, there remains many promising avenues to explore. We are beginning to weave self-compassion into sport culture but there are still questions to answer, as well as ideas to share.

Mental health in elite sport: applied perspectives from across the globe

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ABSTRACT

Despite the potential positive influence of sport, we have seen in recent years several examples of elite athletes experiencing mental health (MH) problems, which corresponds with research findings demonstrating significant levels of mental ill-health among some athlete populations. How can we best understand this? Is a downside to the intense involvement in organized sport needed for athletes to be successful? It is our collective view that the relative failure to address MH in sport over the years has been in part due to prevailing stigma and false misconceptions that athletes have an indestructible psyche. However, in today's society, gaps in adequate MH support are more due to a lack of knowledge, skills, and funding within organizations. This symposium is showcasing four chapters from the International Perspectives on Key Issues in Sport and Exercise Psychology on "Mental Health in Elite Sport: Applied Perspectives from Across the Globe" published in partnership with the International Society of Sport Psychology. First, we will set the scene for understanding and situating mental health in elite sport. Second, Johanna Belz and colleagues will outline examples of good practice in preventing mental disorders and promoting mental health in elite athletes in Germany. Third, Frank Lu will describe a Taiwanese case of an archery coach as an example to report how the coach's leadership influence athletes' MH, performance, and

KEYWORDS

mental health; well being; culture

satisfaction. Fourth, Franco Noce will illustrate the organization of sport psychology and MH problems in Brazil. Fifth, Natalie Durand-Bush outlines the context of MH in Canadian high-performance sport, a review of relevant MH support pathways and organizations and the forthcoming Canadian national MH strategy. Finally, this tour around the world ends in a discussion led by Kristoffer Henriksen, who will illustrate the global differences in MH service provision within different contexts, and organizations in the form of five postulates.

Mental health in germany – examples of good practice in preventing mental disorders and promoting mental health in elite athletes

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ABSTRACT

In 2009 the German national soccer goalkeeper Robert Enke committed suicide due to severe depression. At the time it was becoming increasingly acknowledged that elite athletes are not protected from or immune to mental health disorders (e.g., depression, burnout, anxiety) but are at the same risk as the normal population (Belz, Kleinert, Ohlert, Rau, & Allroggen, 2018; Frank, Nixdorf, & Beckmann, 2015; Junge & Feddermann-Demont, 2016) or even more prone to specific mental health problems such as eating disorders (Bratland-Sanda & Sundgot-Borgen, 2013). Over the past decade there has been an increasing interest in supporting athletes' mental health (Moesch et al., 2018) and also in Germany the first applied initiatives (e.g., MentalEmpowerment, Robert-Enke-Foundation, Department for Sport Psychiatry) providing support for elite athletes with regard to their mental health were founded. These initiatives focus on either the prevention of or therapy for mental health disorders. In order to offer the optimal level of support, athletes should receive help at an early stage in their development so that prevention programs on sport psychology basics (e.g., activation regulation, self-talk, positive imagery) can foster their mental strength or resilience. This becomes important when critical situations like injury, squad selection processes or stressful personal situations (e.g., exams, conflicts with parents or peers) occur and increase the individual stress level of the athlete. Furthermore, help also should be offered when athletes are already suffering from more severe mental health problems (e.g., depressive mood, anxiety or eating disorders). In Germany, there are several applied initiatives that provide support for elite athletes with regard to their mental health. The purpose of this presentation is to describe two examples, the initiatives mentaltalent and MentalEmpowerment, which aim to systematically structure and provide sport psychology services in order to promote mental health. If an athlete subsequently requires referral to psychotherapeutic or

KEYWORDS

mental health; sport psychology services; Germany

psychiatric care, MentalEmpowerment also provides contact to specialized experts and appropriate therapy. Additionally, we will provide an overview of how different professions collaborate within the aforementioned German initiatives and how these processes can be improved in the future. For future perspectives, we will discuss the initiatives mentaltalent and MentalEmpowerment, with their networks of scientists and practitioners from sport psychology, psychotherapy, and psychiatry, should more intensively discuss the common goals and programs that contribute to the mental health of athletes. This could be a further step in learning from other countries and sharing strategies that have already been developed.

Coach's influence on athletes' mental health in Taiwan: a case report

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ABSTRACT

Taiwan is a small island located in east-southern China with 35,808 square kilometers which is inhabited by 23 million citizens of various ethnic groups: an original Chinese immigrant majority, an Aboriginal minority, and some new immigrants from Asia, Africa, Europe, Oceania, and America (Wikipedia, 2020). Although only a small island, Taiwan is ranked as the 21st economy body and the 15th GDP in the world. To develop and promote competitive sports in Taiwan, the Taiwanese government established a central sports regulatory authority named "Sports Council" (SC) in 1923. However, the early sports authority received little attention from the public and did not function well. After several times of reforms, the highest sports governing authority today is Sports Administration (SA) under the Ministry of Education (MOE, 2020). For a long time, the competitive sport has been the most attractive form of sport in Taiwan. Especially, in the mid-20th century when a national youth baseball team won the Little League Baseball (LLB) championship in 1969 in the United States. The outstanding performance arose a nation's enthusiasm for competitive sports. For this reason, baseball became one of the most popular sports in Taiwan. Later, some Taiwanese players joined professional baseball teams in Japan, the US, Korea, and Taiwan which increased the popularity of baseball in Taiwan. In addition to baseball, basketball is also very popular due to a marked NBA influence. Many Taiwanese citizens watch the NBA from TVs and social media. Mental health (MH) in elite sport is a prominent issue in the world's competitive sports. Recently, Schinke and colleagues (Schinke, Stambulova, Si, & Moore, 2020) called on sports professionals to make efforts to protect and enhance elite athletes' mental health in their ways to sports excellence. The purpose of this presentation is to describe a Taiwanese case of an archery coach as an example to report how the coach's leadership influence athletes' MH, performance, and

KEYWORDS

Taiwan; mental health; archery

satisfaction. The case synthesized several persons' stories into a culturally-reflective report. The contents include how Taiwanese culture influences sports coaches' education, personality, and sports involvement. These factors, in turn, influence the archery coach's leadership in sports training and the Olympic Games. I would like to share some information about elite sports and MH in Taiwan. Several theoretical implications, reflections, and practical applications are also discussed.

Mental health in sport – brazilian case: olympic, paralympic and soccer athletes

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ABSTRACT

Brazil is a country of continental proportions, with the 5th largest population in the world originally made up of different ethnic groups, such as indigenous (natives), Portuguese (main colonizers) and Africans (brought to Brazil as slaves at the time of colonization). From a cultural perspective, the important contribution of immigrants (European, Japanese and Arabic) to Brazilian traditions (Brandão and Vieira, 2013) is highlighted. From the economic view point, the recent reforms have improved the stability of the economy, but the country still struggles with high levels of social inequality, which require a government agenda that prioritizes their confrontation, aiming at a more just and civilized society (Paiva et al., 2016). From the perspective of education, the Federal Constitution states that "education" is "a right for all, and a duty of the State and the family". Nevertheless, in 2013, the results of the Brazilian Institute of Geography and Statistics point to 8.3% of illiteracy in the country (Lacruz et al., 2019). The first records of the performance of psychology in sport in Brazil date back to 1954 and since then this science has been evolving in practical and theoretical terms. The main sports institutions in Brazil are the Brazilian Olympic Committee, the Brazilian Paralympic Committee and the Brazilian Football Confederation. The purpose of this presentation is to illustrate the particular administrative characteristics and a history with different relationships in the Brazilian context of how this affects caring for the MH of athletes. We will describe a study of 104 sports psychologists and mental trainers. An interview script was used to explore the different aspects of mental health in competitive athletes in Brazil. The coding of the data resulted in eight categories of analysis. The qualitative fields of the interview script allowed surveys of strategies adopted by different professionals of Sport Psychology, their respective institutions and coaches, as well as work proposals and barriers encountered. It is concluded that the field of MH in Brazilian sport, despite the advances observed, still needs greater coverage and systematization. At the end, we will discuss how sports managers should pay attention to this aspect and take more effective actions.

KEYWORDS

Brazil; Football; Mental health

Mental health and sport in Canada: an example of a national mental health strategy and sport-focused collaborative care

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ABSTRACT

The purpose of this presentation is to discuss the context of mental health in Canadian high-performance sport. To date, athletes in Canada have access to a variety of mental health care pathways within and outside the high-performance sport system. The Canadian Centre for Mental Health and Sport (CCMHS) established in 2018 serves as one of these pathways. This specialized national hub aims to provide sport-focused mental health services to competitive and high-performance athletes and coaches, conduct research in the area of mental health and sport, and offer educational programs for the sport community. Furthermore, a Canadian national mental health strategy for high-performance sport was recently developed and launched by Canadian sport leaders representing the Canadian Olympic and Paralympic Sport Institute Network (COPSIN), the CCMHS, Game Plan, and Own the Podium (OTP). This strategy will help to coordinate the mobilization of the human and financial resources required to adequately promote and address mental health and mental illness in sport. In this presentation, we will give an overview of the mental health strategy and service provision pathways in high-performance sport. We will also discuss the CCMHS' unique mental health care model (i.e., sport-Centered, Comprehensive, Collaborative, and Convenient) to underscore key factors that must be considered in the provision of mental health care in the sport context. Low mental health literacy, a lack of funding, and stigma remain barriers to help-seeking among athletes and coaches in Canada. Recommendations to fulfill existing gaps will be provided.

KEYWORDS

Canada; mental health; mental illness

Dual career and mental health

Paul Wylleman

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ABSTRACT

Although the number of studies on dual elite sport and study careers in Europe has increased enormously the past decades (Stambulova & Wylleman, 2019), the amount of research on the topic of mental health within this dual career (DC) domain was less numerous. In an attempt to tackle this research gap, this symposium focuses on the topic of mental health within the DC context, bringing forward different perspectives. First, Jolan Kegelaers provides a review on those studies that did focus on mental health in the population of student-athletes. This review

KEYWORDS

Mental health; Dual careers; Covid-19

confirms that limited studies have specifically focused on mental health (or ill-health) in the DC context and that there is only very limited research on the DC-specific factors that impact mental health and vice versa. The second presentation in this symposium by Koen De Brandt, directly counters this need, by providing the first results of the Dual Careers for Mental Health project (DC4MH). This presentation will provide results of the first phase of the project, whereby athletes from 6 different countries were involved, providing insight in the bi-directional association between dual career experiences (protective or risk factors) and mental health. In the third and fourth presentation, the role of COVID-19 on mental health within DC contexts, is brought to the attention. Joan Pons provides insight in how the pandemic impacted mental health in student-athletes, showing the important role of the environment (e.g., support for their self-esteem). Marta Borrueco will present findings on female student-athletes, illustrating the importance of support by clubs/sport organizations in helping female athletes to cope with the additional challenges brought forward by the pandemic. Based on these presentations, the discussant will bring forward several topics and lines of future research to be discussed, amongst others: (a) The need for more studies focussing on a positive mental health perspective (rather than solely focussing on mental-ill-health and deficit perspectives) and how this positive psychology perspective could be integrated within research (e.g., prospective longitudinal research) and practice (e.g., interventions focussing on proactive resilience enhancement); (b) The avenues for future research and good practices on the impact of COVID-19 on mental health in DC contexts; and (c) the role of policy-makers and organisations in ensuring mental health within DC contexts.

A scoping review on the mental health of dual career athletes in sport and education

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ABSTRACT

The societal value of a dual career (DC) in 'sport and education' has been widely accepted by policy makers, researchers, and applied practitioners (European Commission, 2012). Nevertheless, balancing the practice and performance requirements of high-performance sports with optimal academic development may be highly demanding as well. DC athletes are not only confronted with the typical challenges of elite sports (e.g., performance pressure, injuries, selection issues) but also those relating to the (higher) education context (e.g., academic pressures, tasks and assignments, moving to new locations). Taking into account these dual demands, scholars have recently started to call attention towards the mental health of DC athletes as well (Stambulova & Wylleman, 2019). Such increased attention for DC athletes' mental health can be situated within a budding mental health discourse

KEYWORDS

Mental ill-health; student-athletes; systematic review; well-being

in competitive and elite sports, marked by a growing number of position and consensus statements by leading sport organizations (see Vella et al., 2021). Nevertheless, within this mental health discourse, DC athletes have still received relatively limited attention as a specific population of interest, especially within a European context. The aim of this scoping review was therefore to provide a comprehensive overview of current state of the research examining mental health in DC populations. A systematic literature search within Scopus, SPORTDiscuss, PsychInfo, and PubMed yielded 5579 initial hits. Preliminary results after a first round of screening seem to indicate that DC athletes have frequently been used as a convenience population, but that limited studies have specifically focused on the DC context or the impact of DC-related factors on mental health. The most frequently studied mental health outcomes in DC athletes included clinical and sub-clinical symptoms of depression, anxiety, and burnout; as well as a more positive state of well-being. Commonly examined determinants for mental health outcomes in DC athletes included demographic (e.g., gender, ethnicity), physiological (e.g., concussion), psychological (e.g., stress), social (e.g., support), or organizational (e.g., support structures) factors. Further findings as well as research and applied implications of this scoping review will be discussed.

Dual careers for mental health: the bi-directional relationship between student-athletes' dual career experiences and mental health

Koen De Brandt, Jolan Kegelaers, Simon Defruyt, Paul Wylleman and Sofie Smismans

Vrije Universiteit Brussel

ABSTRACT

In recent years, there has been a sharp increase in research on dual careers (Stambulova & Wylleman, 2019) and mental health of athletes (Kuettel & Larsen, 2019), and their importance have been increasingly emphasized in light of the COVID-19 crisis and the postponement of the Olympic and Paralympic games. However, the bi-directional relationship between athletes' dual career experiences and their mental health has received only limited attention. In response, the Erasmus+Sport project "Dual Careers for Mental Health" (DC4MH, 2021-22) was initiated by 28 experts on dual career and/or mental health from ten organizations in six EU Member States (Belgium, Denmark, Italy, Spain, Slovenia, Sweden) with the objective to optimize mental health services within European dual career 'elite sports and education' organizations. More specifically, DC4MH aims to develop, implement, and evaluate research-based mental health promotion recommendations and tools, centered around (a) mental health structures in DC organizations, (b) mental health monitoring, (c) mental health literacy, and (d) psychological resilience-building strategies. This presentation will discuss the

KEYWORDS

Student-athletes; well-being; Covid-19; mental health literacy; resilience

results of the first work package of the DC4MH project (Jan – Sep 2021). An online survey was developed by the consortium (Jan – May 2021) with the aim to identify student-athletes' dual career experiences, mental health, mental health literacy, resilience and life satisfaction. We drew on validated scales for mental health (MHC-SF, GHQ-12, GAD-7, PHQ-9) and resilience (CD-RISC-10), and developed new scales for DC experiences, mental health literacy and life satisfaction. The questionnaire will be sent to more than 9.000 dual career athletes across the six participating countries. First results are expected in June 2021 and will be presented during the conference. During the presentation, specific attention will be paid to the bi-directional relationship between different types of dual career experiences (i.e. protective vs. risk) and the mental health continuum (i.e. from languishing to flourishing).

Student-Athletes' perceived social support and mental health: results one year after the beginning of the lockdown

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Universitat Autònoma de Barcelona

ABSTRACT

The irruption of the COVID-19 pandemic entailed a strict lockdown with important social isolation and mobility restriction policies in many countries. Research suggests that this non-normative transition had a negative impact on student-athletes' mental health (e.g., Pons et al., 2020), and identified social support as an important protective factor for mental health during lockdown (Graupensperger et al., 2020). Despite this knowledge, to date, little is known about the mid-term consequences of the pandemic on athletes' mental health. This study aims to address this gap by (a) describing the perceived social support (e.g., coaches, teammates, club staff) and mental health levels of student-athletes one year after the beginning of the lockdown; and (b) examining the predictive role of student-athletes' perceived social support on mental health. In this study participated 365 student-athletes (45.8% female) of ages between 12 and 18 ($M = 15.30$ | $SD = 1.72$). Data was collected during March and April 2021, and participants responded to the Perceived Available Support in Sport Questionnaire and the General Health Questionnaire-12, both in a Likert scale ranging from 1 to 7. All participants reported regularity of practices and competitions during the previous weeks to data collection. Descriptive results suggest that student-athletes received different types of support from their environment (Emotional Support: $M = 5.29$ | $SD = 1.21$; Esteem Support: $M = 5.19$ | $SD = 1.15$; Informational Support $M = 5.13$ | $SD = 1.05$) and show the mental health levels of student-athlete population one year after the beginning of the lockdown (Social Functioning: $M = 5.14$ | $SD = 0.99$; Anxiety and Depression: $M = 3.15$ | $SD = 1.43$; Loss of Confidence: $M = 2.66$ | $SD = 1.60$). Regression analysis identified Esteem Support as the only significant predictor of mental health

KEYWORDS

Dual Career; perceived support; wellbeing; Sars-CoV-2

for all the indicators (Social Functioning: $\beta = .43$; Anxiety and Depression: $\beta = -.29$; Loss of Confidence: $\beta = -.33$). Our findings suggest an improvement of mental health levels one year after the beginning of the lockdown (c.f., Pons et al., 2020). Also, support addressed at reinforcing student-athletes' self-esteem showed to be a relevant predictor of student-athletes' mental health one year after the beginning of the lockdown. In line with the previous literature that emphasizes the importance of student-athletes' environment for their adaptive functioning (Morris et al., 2020), clubs should be aware of their role on providing young athletes' an adequate support, especially during non-normative transitions.

Exploring the life-spheres and mental health of spanish female student-athletes during the COVID-19 lockdown

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ABSTRACT

The worldwide spread of COVID-19 during 2020 caused the Spanish population to go on lockdown for almost 100 days. The unexpected lockdown forced an abrupt stop to all the sport practices and competitions, which impacted negatively on elite athletes' mental health (MH). Specifically, evidence suggests that female athletes reported a higher negative impact of COVID-19 on their MH in comparison to their male counterparts. In order to further explore this specific reality, this study has the objective of describing the impact of COVID-19 lockdown on Spanish female young student-athletes' life-spheres and MH. The Holistic Monitoring Questionnaire (HMQ) and the General Health Questionnaire (GHQ-12), along with measures regarding life-conditions and sport-related information, were administered to 299 female young student-athletes ($M = 15.82$; $SD = 1.47$). In general, although participants reported to be generally satisfied with all life-spheres, the rest and recovery domain had been the most impacted by the COVID-19 lockdown ($M1-5 = 3.07$). Regarding MH, female student-athletes reported high levels of social functioning ($M1-7 = 4.74$) and moderate anxious/depressive symptoms ($M1-7 = 3.16$). Correlation analysis showed a strong relation between dual career and health in both the current satisfaction with life-spheres ($r = .72$) and the COVID-19 lockdown impact on them ($r = .67$). Furthermore, relations between life-spheres and MH were also found, specifically social functioning was linked to both the current satisfaction (e.g., health: $r = .44$, dual career: $r = .41$) and the low impact of COVID-19 lockdown on life-spheres (e.g., health: $r = 0.55$, dual career: $r = 0.46$). Additionally, anxious/depressive symptoms were associated with a higher impact of COVID-19 lockdown on life-spheres (e.g., health and recovery: $r = -.33$). Moreover, perceived support by the club and/or sports organizations was moderately related to social functioning ($r = .30$) and to the satisfaction with the dual career ($r = .30$)

KEYWORDS

Female athletes; Mental ill-health; Sars-CoV-2; Life satisfaction

= .28) and health ($r = .22$) domains. In conclusion, this study showed how support provided by clubs/sports organizations and being able to cope with dual career demands seem to act as protective factors for female student-athletes' MH and for general satisfaction with life-spheres. In line with this, some practical recommendations aimed at supporting clubs/sports organizations in their responsibility to provide specific supportive resources (e.g., dual career support services) for female student-athletes in order to protect their MH and to promote their holistic development are provided.

Bridging the research-practice divide: efforts to advance safe sport

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University of Toronto

ABSTRACT

The purpose of this symposium is to address successes and challenges in linking research and practice regarding Safe Sport initiatives. Research on athlete maltreatment, including sexual, psychological and physical abuse, neglect, bullying and discrimination, has grown substantially recently across the globe. This burgeoning field of inquiry, together with highly publicized cases of athlete abuses such as the Nassar case in the U.S., the Charest case in Canada, and the Bennell case in the U.K., have prompted sport organizations to develop various initiatives to prevent and address athlete maltreatment. More specifically, sport organizations have developed policies and codes of conduct, processes for addressing complaints, and educational programmes for sport stakeholders, all in efforts to create safer environments. This symposium will examine the extent to which research has informed these applied initiatives and where challenges lie in translating research to practice. The first presentation will provide an overview of the current state of knowledge according to empirical research on athlete maltreatment, including the prevalence of various types of maltreatment, perpetrators, and effects on the athletes. The second and third presentations will be delivered by researchers in the field of athlete maltreatment who also work in sport organizations with responsibilities for Safe Sport; these presenters will address the challenges experienced in trying to link research to practice and will provide examples of successful bridging. The fourth presentation will address a former athlete's experience in advocating for change in the system based upon research. Challenges and recommendations for having athletes' voices heard and incorporated into policy and programme development will be discussed. The symposium will conclude with lessons learned for bridging the research-practice divide with respect to Safe Sport initiatives.

KEYWORDS

Safe Sport; Maltreatment; Research; Practice

Exploring safe sport education in Canada: an empirical approach to safe sport training

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Alpine Canada Alpin

ABSTRACT

To date, several sport organizations across the globe have developed programmes to combat detrimental and unsafe practices in sport. Common criticisms of these programmes are the lack of empirical foundations and an exclusive focus on sexual maltreatment, while disregarding other types of maltreatment, such as physical abuse, psychological abuse, and neglect. Moreover, the interpretation of Safe Sport conveyed in these programmes is often limited to the prevention of maltreatment perpetrated solely against athletes. The emerging research on Safe Sport suggests programmes must be made available to all stakeholders, identify the range of physically and psychologically harmful behaviours that occur in sport, and expand beyond the prevention of maltreatment to identify strategies for promoting positive values and human rights. In Canada, efforts have been made to create educational programmes informed by research, such as the Coaching Association of Canada's (CAC) Safe Sport Training module. The purpose of this presentation is to address the successes and challenges experienced in advancing an empirically-informed, Safe Sport Training module. The CAC's Safe Sport Training was launched on April 1st, 2020 as an eLearning module. The module is ninety-minutes long and offered for free in English or French through the CAC's online learning platform, the Locker. The training meets the minimum standards for mandated safe sport training for individuals under the authority of all Sport Canada-funded organizations. Sport Canada mandated that all nationally funded sport organizations provide training on preventing and addressing maltreatment in sport. The training endeavours to increase sport stakeholders' knowledge and awareness of all types of maltreatment in sport and the central tenets of the new Universal Code of Conduct to Prevent and Address Maltreatment in Sport; provide stakeholders with guidelines for managing disclosures of maltreatment, and; educate stakeholders on methods of fostering an optimal sport environment. The training programme is influential in advancing Safe Sport and more broadly provides a template for future initiatives. To continue to foster Safe Sport experiences for all participants, it is important for initiatives to be grounded in empirical research, to highlight a spectrum of harmful behaviours in sport, and promote a definition of Safe Sport that emphasizes the collaborative responsibility of all sport stakeholders to create, foster, and preserve sport environments that ensure positive, healthy and fulfilling experiences for all individuals.

KEYWORDS

Safe Sport; Education;
Maltreatment

From research to practice: developing a safe sport program at a national sport organization

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Gymnastics Canada

ABSTRACT

In early 2018, as a response to the international movement to advance Safe Sport, Gymnastics Canada (GymCan) became one of the first National Sport Organizations in Canada to hire a full-time Director, Safe Sport, with the primary focus of overseeing the development, implementation and evaluation of organizational initiatives that promote safe, healthy, and inclusive experiences free of potential harm for all individuals in the sport. A cornerstone of GymCan's Safe Sport portfolio is the Safe Sport Framework, which outlines the organization's working definition of 'safe sport', the vision and corresponding principles of a safe gymnastics environment, the evolving topic areas included in the portfolio (i.e., abuse prevention and response, health and wellness, equity and inclusion, risk management), as well as the corresponding objectives for policy, education and advocacy required to advance culture change in the organization and sport. This presentation will provide an overview of the creation of GymCan's Safe Sport Framework and portfolio from inception, as well as, explore the conceptualization and implementation of GymCan's policy, education and advocacy related to safe sport, including: an evidence-based approach to the development and/or refresh of key organizational policies, including but not limited to, National Safe Sport Policy, Code of Ethics and Conduct, Maltreatment and Discrimination, Complaints and Discipline, and Inclusion policies; the design and delivery of custom research-driven educational initiatives facilitated through various learning mediums (e.g., in-person, webinar, blog, self-directed) that align with Sport Canada's education mandate and support and encourage the professional development of stakeholders, such as athletes, coaches, judges, and organizational staff; and, the domestic and international advocacy efforts carried out by the organization to build partnerships and share best practices with the ultimate goal of supporting and advancing culture change in the sport across the globe. While there remains much work to be done, this presentation will provide early reflections on the successes, challenges, barriers and key learnings related to an organizational and sport-wide culture shift towards ensuring positive, healthy, and fulfilling experiences for all.

KEYWORDS

Safe Sport; Prevention;
Education; Advocacy; Policy

Breaking the culture of silence: insights on how athletes are speaking up about maltreatment

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ABSTRACT

Over the past year, athletes from several sports have been speaking out about their experiences of maltreatment, including athletes from artistic swimming, gymnastics, and rugby. Athletes have disclosed their experiences in various ways, including: a) through responses to prevalence surveys and interviews conducted by researchers (e.g., Kerr et al., 2019; Rulofs et al., 2019; Vertommen et al., 2016); b) through social media, such as the collective hashtag GymnastAlliance; c) through the submission of a formal report to the sport organization, such as that used by the Canadian National Rugby team; d) through the use of the media, which was seen in the case of the Canadian National Artistic Swimming Team, and; e) through filing a legal claim, such as the class action law suit against Alpine Canada. Despite the increased public awareness of athletes' experiences, recent prevalence data revealed that only 46% of athletes had told anyone about their experiences and only 16% of current and 13% of retired Canadian athletes submitted a formal report. Given the low rates of disclosure and reporting from athletes, the purpose of this presentation is to review the various ways in which athletes advocate for themselves. Insight into these initiatives can bring understanding to athletes' decisions for disclosing, avenues athletes feel safest or most secure in reporting, and what supports are needed by the sport community for athletes to disclose and report. This presentation will provide an overview of the different avenues that athletes can use to bring awareness to their experiences, from the perspective of a former athlete who has used several of these means. These experiences will be interpreted through the context of the current state of researchers and provide recommendations for future actions in research and practice.

KEYWORDS

Athlete advocacy;
Maltreatment; Disclosure

Perspectives on mental health in sport

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ABSTRACT

Traditionally, sports is seen as a means to promote physical, psychological, social and moral benefits, but top level and professional sports has progressively led to push the athletes' physical and psychological resources to their limits risking their welfare and health. Sophisticated training methods, technological means, pharmaceutical products, and often doping, have been developed in order to achieve outstanding sports results over athletes' physical and mental health. Moreover, the overall Society's attitude has been influenced by those tendencies, which has impact, for example, in fitness and participation sport activities, as well as referees' psychological wellbeing. The purpose of this symposium is to present three different perspectives related to mental health in sport in three different

KEYWORDS

mental health; sports;
mental toughness;
performance-enhancing
substances; mental disorders

contexts and to discuss them under the current general tendency of connecting sport and psychological wellbeing and health, in line with the United Nations sustainable development goals established in September 2015. The first presentation takes into account that sport referees' mental health is not usually studied internationally and will report results from a research with male and female Portuguese professional soccer referees in what regards mental disorders symptoms and coping strategies. Results suggest a pivotal role of coping mechanisms in the relationship between anxiety and depression with health-related behaviors. The second presentation will focus on participation sport at gym level and will share a study about the prevalence of illicit performance-enhance substances in Portuguese male and female gym users that suggests that artificial improvement of performance is not limited to competitive sport and may be a public health issue to be faced by authorities. Finally, taking the perspective that training environments and coaching methods have impact on the athletes' personal development and mental health, the third presentation will focus on mental toughness and discuss its preventing role related to psychological problems in the sport context. It follows the concept that the development of athletes' psychological skills and capacities to cope with training and competitive demands will be a factor to prevent mental health. In conclusion, no matter the sports context, mental health issues may emerge leading to the need of psychologists, coaches and authorities being aware of it and of promoting mental health literacy in sports.

Optimizing training environments: balancing mental toughness and mental health in sport

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ABSTRACT

Nurturing athlete development is one of the main concerns in contemporary sport. In the last decades, extense literature has been developed around the topic and progressively the sport community (e.g., sport scientists, skateholders, managers, coaches, athletes) understood the need for optimizing training environments, considering athletes' psychological development and preparation as a central aspect of this process (Bloom, 1985; Côté, 1999; Martindale et al., 2010; Henriksen et al., 2010). Simultaneously, a growing attention is been given to athletes' mental toughness (e.g. Gucciardi et al., 2008; Jones et al., 2002). Mental toughness has been defined as an athlete ability to successfully cope with the vast demands of his/her sport context, in such a way that allows the athlete to be more consistent, focused, confident and in control of pressure (Jones et al., 2002). Therefore, mental toughness may be considered as a fundamental building block of sport performance and success.

KEYWORDS

athlete development; mental toughness; mental health; training environments

However, recently it was suggested that the focus on athletes' mental toughness and performance at all costs may affect their mental health (Bauman, 2016). Notwithstanding, other authors (Gucciardi et al., 2016) have critically reviewed this perspective and argued that more than contradictory, mental toughness may prevent athletes' mental health related problems. The purpose of this communication at the symposium "Perspectives on Mental Health in Sport" will be to take into account the above mentioned issues and: 1) to discuss these issues according to the most recent literature; 2) to highlight the conclusions of the International Society of Sport Psychology position stand about athlete's mental health, performance and development (Schinke et al., 2017) and 3) to present some avenues for further studies and some practical implications for optimizing training environments and athlete development.

Common mental disorders, coping strategies, and health-related behaviours among soccer referees

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ABSTRACT

Common mental disorders symptoms have been identified in professional athletes of various sports, including distress, anxiety, depression, sleep disorders, excessive alcohol consumption, or abnormal eating behaviours. However, little is known about sports referees' mental health and the role of coping strategies on the relationships between common mental disorders and health-related behaviours. Thus, this study aimed to analyse the prevalence of mental disorder symptoms and to examine the associations between distress, anxiety/depression, adaptive and maladaptive coping strategies with sleeping disturbance, adverse alcohol consumption, and eating habits in national level soccer referees. Participants were 236 national level female (n = 56) and male (n = 180) soccer referees (n = 177) and assistant referees (n = 59) registered in the Portuguese Football Federation. The referees participated in an online survey, including the Distress Screener, General Health Questionnaire (GHQ-12), Brief COPE, Sleep disturbance (PROMIS), Alcohol Use Disorders Identification Test Consumption (AUDIT-C), and Eating habits scale. Prevalence of symptoms related to common mental disorders was 12.3% for distress, 15.7% for depression, 20.3% for anxiety, 13.6% for adverse alcohol consumption, 45.8% for sleep disturbance, and 40.2% for adverse nutrition behaviour. Findings from a two-step robust maximum likelihood method of Structural Equation Modelling (SEM) showed that the model fit to the data [$\chi^2/df = 988.66$ (652); $p < 0.001$; TLI = 0.92, CFI = 0.93, SRMR = 0.05, and RMSEA = 0.04; 95% CI (0.038, 0.046)] and revealed that distress is positively associated with anxiety and depression. Also, SEM

KEYWORDS

anxiety; coping; depression; sleep disturbance; eating habits

analysis revealed significant relationships between anxiety with maladaptive coping, and between depression with both adaptive and maladaptive coping strategies. In turn, adaptive and maladaptive coping strategies are associated with sleep disturbance and adverse eating behaviours. In summary, the results of this first study about the soccer referees' mental health revealed the pivotal role of coping mechanisms in the relationship between anxiety and depression with health-related behaviours, such as sleep and eating habits. From a practical viewpoint, referees' committees need to address referees' health-related behaviours and meet their mental health needs for the benefit of both their performance and well-being.

Prevalence and determinants of illicit performance-enhancing substances in portuguese gym users

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ABSTRACT

Nowadays, the use of illicit Performance-Enhancing Substances (PES) is not confined to elite sport, it is also spread throughout gymnasias and fitness centers, and it is seen as a public health concern, since the long term use these substances (PES) can be associated with psychological symptoms (e.g., depressive symptoms, antisocial and violent behaviors, suicidality) and several physical disorders (e.g., wide variety of cardiovascular, psychiatric, metabolic, and musculoskeletal disorders) or even fatal side effects. Studies focusing PES use among gym users are few, without providing information about social indicators and determinants to further explore why this specific population use these substances. The purpose of this study is to investigate the extent of PES use and the social-cognitive determinants of the intentions to use PES. We also intend to test the Theory Planned Behavior's usefulness in predicting self-reported PES use in both genders. A convenience sample of Portuguese gym users (n = 453) completed an anonymous web-based survey. Multiple binary logistic regression, the Chi-Square test or Monte Carlo Simulation or Fisher's Exact test were used. The odds ratios and their respective 95% confidence intervals were calculated. Also, structural equation modeling, multigroup analysis and t-test with the Welch correction for heterokedastic variances were used. The use of illicit PES, which varies significantly according to gender, education, occupation, exercise profile and type of practice, was reported by 11,1% of gym users. Peer effect and media appear to be strikingly important in the misuse of PES. At the structural level, results support attitudes, beliefs and subjective norms in predicting intentions to PES use in gym users with subjective norms being its strongest predictor. The predictive model was invariant across gender; however, compared to males, females believed less in the performance enhancing effects of PES, were less prone to the influence of significant others and had weaker intentions to use

KEYWORDS

gym users; performance-enhancing substances; psychological strategies; social-cognitive determinants; gender

these substances. Results provide precise insight into the specific factors associated with PES use, which could support psychological strategies in this particular population. Future studies should take into account individuals personality traits and characteristics which can influence (or be a reflex of) the behavior for taking these substances, such as: low self-esteem, having a greater tendency to behavioral or emotional problems (e.g., anxiety, tension and depression), super-man complex and perfectionism, in order to better support effective psychological strategies in PES prevention.

Obstacles in applied settings during the COVID-19 pandemic: comparison, challenges, and success

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ABSTRACT

Numerous countries declared a state of emergency in response to the COVID-19 pandemic in order to contain the spread of the virus. Ding et al. (2021) examined the anxiety and depression symptoms among adults in 11 countries during the COVID19 lockdown and found that these countries have a high rate of mental health problems. In this symposium, we present practical applications of sport psychology by practitioners in Hong Kong, Singapore and Malaysia during the COVID-19 lockdown. In the first presentation, Lo will discuss her experiences working with athletes in Hong Kong using teletherapy vs in-person therapy. In the next presentation, Lim shares his experiences in assisting Singaporean athletes in their preparation for the Olympics, using a case study of an elite shooter's Olympic qualification journey through the pandemic. Following that, Koh et al. examines the use of mindfulness acceptance commitment (MAC) approach with elite triathletes both prior to and during the COVID-19 pandemic. Finally, Kuan et al. compare one-to-one and group teletherapy dealing with games cancellations and demotivated athletes in the face of a pandemic. To conclude, all the studies make practical contributions to sport psychology by expanding the understanding of the practices, challenges, and successes encountered during the COVID-19 pandemic lockdown from different Asian cultural perspectives.

KEYWORDS

COVID-19; Mental health; Challenges; Teletherapy; Practitioners

The use of teletherapy vs in-person therapy during COVID-19: suggestions for sport psychology practitioners

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ABSTRACT

According to the NCAA athlete well-being study in Fall 2020, the top three mental health-related concerns athletes faced during the pandemic are feeling overwhelmed by all they had to do (78%), feeling mentally exhausted (66%), and feeling sad (57%) (NCAA, 2020). This has led to a rise in the demand for sport psychology services in the US. As of Mar 2021, the author's clientele in Hong Kong doubled when compared with the previous fiscal year (Apr 2019 - Mar 2020), where new athletes undergoing therapy admitted having mental health issues that are almost identical to the concerns listed above. The closure of facilities and strict lockdown measures since the hit of the first COVID-19 wave led athletes in HK to turn to teletherapy, which quickly gained traction and has become the author's primary mode of interaction with athletes when social distancing measures were in place. On the other hand, in-person therapy sessions were still conducted in between COVID-19 waves. Transitioning from in-person therapy to teletherapy is a challenge for many, considering that in-person sessions are typically the norm in HK. For sport psychology practitioners, it is now a good time to evaluate their own unique approaches towards these two types of practices. Although it is of utmost importance to take care of athletes' wellbeing during the therapeutic process, practitioners should also recognize additional factors that may affect the effectiveness of their work, including (i) the importance of logistics behind carrying out different types of therapy, (ii) the nuts and bolts between teletherapy and in-person therapy and how their differences might affect athletes' motivational levels to engage in therapy, (iii) transitions between teletherapy and in-person therapy, and (iv) pandemic-related factors that may hinder the therapeutic process. Suggestions may be of help to fellow practitioners in ensuring that they are maintaining the highest standards of competence in their work during these times.

KEYWORDS

Mental; COVID-19; Athletes; Teletherapy; In-person therapy

Experiences of a sport psychology consultant supporting a singaporean athlete's olympic qualification journey in the midst of a pandemic

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ABSTRACT

The Year 2020 was a challenging year for most, but perhaps even more so for athletes looking to participate in the quadrennial Olympic Games that many consider to be the pinnacle of their sporting careers. The postponement of the games by one year due to the COVID pandemic undoubtedly caused major disruptions, and in some instances, forced athletes to retire. For the rest of the athletic population still chasing the Olympic

KEYWORDS

COVID-19; Olympics; Sport Psychology; Mental; Well-being

dream in 2021, many would have experienced difficulties in relation to training and competition due to the restrictions imposed to battle the ongoing pandemic, leading to increased physical and mental health concerns (di Fronso et al., 2020; Whitcomb-Khan et al., 2021) In Singapore, the country went into full lockdown (or "Circuit Breaker" as it was called locally) from April 7th 2020 till June 1st 2020, which meant that athletes lost access to their usual training facilities and could only train at home. It was not until 18th June that sport facilities reopened. In addition, the government only allowed essential outbound travel for its citizens. This mattered little however; most international competitions were either cancelled or postpone for much of 2020. these restrictions not only affected the physical and technical preparations of local athletes, but also had an adverse effect on their mental well-being, arguably making the task of Olympic qualification a more arduous journey than it typically is. Several practitioners and researchers have shared their experiences of and advice to providing sport psychology support during these challenging times (e.g., Schinke et al., 2020a; 2020b). This is a case study of the author's work as a sport psychologist working with an elite shooter throughout the last one and a half years on her quest to qualify for the Olympics games amidst a pandemic in Singapore. Numerous challenges were encountered; some of them consistent with global trends, while others were context-specific, and unique to the individual. Nonetheless, solutions were found to prepare the athlete in the best possible way to help achieve her goals.

The use of Mindfulness Acceptance Commitment (MAC) approach for malaysian elite triathletes in 2018 & 2021: before and during the COVID-19 pandemic

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ABSTRACT

Mindfulness Acceptance Commitment (MAC) approach has been found to be useful in applied practices. Athletes who receive MAC approach are taught to deal with challenging internal experiences in a non-judgmental way, choosing to persist with their task-at-hand despite discomforts and to remain focused on being grounded within the present moment. Triathlon is an endurance sport that consists of three disciplines, namely swimming, cycling and running, which are conducted sequentially. Psychological strength or mental strength, as such, plays a role in influencing the success that the triathlete. Typically, elite triathletes in Malaysia are not getting their full-time income from the sport. They would still have to juggle their daytime occupation (or education for some younger triathletes)

KEYWORDS

Mindfulness; Acceptance; Commitment; Triathlete; Performance

and triathlon training. They faced many trials during the COVID-19 pandemic. In addition, they have not been exposed to the MAC approach before. This presentation aims to describe how the MAC approach was provided to the Malaysian elite triathletes and the follow-up applications two years later. MAC was taught over six weeks, with one MAC theme introduced per week. Each triathlete was given a one-on-one session of 60-90 minutes per week with homework and practical exercises. After six weeks, the triathletes reported marked improvement in their sport and additional improvements in other domains of their life. Two years later, the same approach was provided with a different cohort of elite triathletes during the COVID-19 pandemic. The flexibility and the promising result of MAC approach can provide an additional sports performance enhancement tool within triathlon. The elite triathletes' encouraging results suggest that it is worth considering that the MAC approach is adapted and incorporated into the triathlon sport.

Comparison between individual and group teletherapy during the COVID19 pandemic: practical implications and productivity

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ABSTRACT

Due to the COVID-19 pandemic, many coaches, sport practitioners and athletes are confined to their homes or are completely devoted to their respective centralised training centres. It can cause many athletes to experience stress, fear, and anxiety about the disease recurrence, separation from their family, frustration over the cancellation of major competition events, boredom, inadequate training facilities, and changes in their daily routine etc. For the Malaysian athletes, individual and group teletherapy have been provided since the start of lockdown. Individual sessions were scheduled via appointment requested by the coaches, with one session per week, while approximately two hour group sessions were held weekly. The one-on-one teletherapy session focused on motivation, goal setting, and overcoming setbacks. As for the group session, psychological skills training from the book Psychological Resources for Training the Mind of the Champion (Kuan, 2020) was used. Additionally, athletes were introduced to online sports games. A total of 230 athletes were evaluated on their satisfaction with online physical training, hydration status, and their psychological well-being, which included motivation, focus and relaxation. The scale was divided into four categories: low, moderate, good and optimal. It was found that the athletes' motivation decreased significantly from an optimal level to a moderate level when major competitions such as International competitions or national games were postponed. Individual

KEYWORDS

Group therapy; Individual session; Teletherapy; Motivation; COVID-19

sessions were intensified during the demotivating period, with over nine sessions conducted daily. Having the training programme delivered via the online platform was critical for athletes to remain motivated and connected to one another. The presentation will conclude with some practical implications for conducting individual and group sessions from the perspective of sport practitioners working with Malaysian athletes.

A multi-perspective exploration of athlete maltreatment: research, practice, and future directions.

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ABSTRACT

Sport can provide athletes with an environment for which physical, emotional, and social outcomes, such as positive life skills, can be developed (Holt, 2016). Sport can also be an environment where athletes are physically, emotionally, and psychologically abused; neglected; groomed; and racially maltreated (Kerr et al., 2019; Mountjoy et al., 2016), leading to detrimental effects on athletes' holistic health including eating disorders, self-harm, mental ill-health, pre-mature sport withdrawal, and trauma that stays with athletes for years following escape from their abuser(s) (Mountjoy et al., 2016). Prevention methods targeted towards maltreatment have been hyper-focused, yet not overly successful within sports psychology scholarship (Kerr et al., 2019), resulting in a continued need to expand understandings of different forms of maltreatment, different contexts for which it occurs, how it affects athletes, and how it can be prevented for future generations (Lang & Hartill, 2015; Parent & Fortier, 2018). Diversifying our approach towards maltreatment through varying perspectives, theories, and disciplines can help create a multi-faceted understanding of maltreatment, leading to ways it can be mitigated so athletes can thrive free from harm (Podzwardowski et al., 2006). This symposium brings together five sports psychology researchers, each overviewing athlete maltreatment through a different theoretical lens. The symposium will begin with a conceptual overview of the importance of athlete health in pursuit of sport excellence, highlighting how negative behaviours may affect athletes' holistic health. The second presenter will showcase a project situated within an informal roles lens and how that lens augmented understanding of how maltreatment may develop within interuniversity sport. The third presenter will theoretically showcase athlete maltreatment through a cultural competency perspective, highlighting how lack of cultural understanding may contribute to smaller forms of maltreatment, such as micro-insults, and how sports psychology practitioners can become aware of, and approach, athlete treatment while being cognisant of culture. The fourth presenter will describe how maltreatment can be understood and perpetuated through varying cultural media narratives and how researchers and

KEYWORDS

Athlete maltreatment; Informal roles; Cultural sports psychology; Media narratives; Safe sport

practitioners can provide safer methods for athletes to disclose maltreatment. The fifth presenter will build off of recommendations for creating safer sport by showcasing a study where National athletes described requirements for them to feel physically, psychologically and socially safe. The presentation concludes with a brief discussion on the current state of athlete maltreatment research, culminating in future directions and practical recommendations for coaches, sport administrators, and sports psychology researchers and practitioners.

Understanding the staff cancer through the perceived experiences of varsity male soccer players

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ABSTRACT

Athlete maltreatment can occur within any sports context regardless of age, country, gender, and competitive level (Mountjoy et al., 2016). Researchers have quantified maltreatment through the use of prevalence surveys (see Kerr et al., 2019; Ohlert et al., 2020) and sought to understand athletes' maltreatment experiences through qualitative methods such as semi-structured interviews (Wilkinson & McCabe, 2020). While explorations of athlete maltreatment have been useful in raising awareness of the severity of maltreatment and enact policy change (e.g., UCCMS), the current approach lacks methodological diversity (Parent & Fortier, 2018), limiting how researchers collect, make sense, and represent athletes' maltreatment stories (McGannon et al., 2019). This presentation is used to showcase a methodologically novel project that situated varsity athletes' stories of maltreatment within a negative informal role lens. The project aim was to develop an understanding of the characteristics and consequences of the staff cancer role – a staff member who spreads destruction throughout a sports team and organization through negative actions. Working within a critical realist framework, photo elicitations were utilized to engage seven former varsity athletes' in reflecting of their playing career within Canadian interuniversity sport. Following the discussion of the photo(s), participants completed an art-based mandala drawing activity structured to empower athletes in sharing their maltreatment that were important to them. The athletes were then encouraged to lead a conversational interview through discussing the stories associated with their drawings. Through an inductive thematic analysis (Braun & Clarke, 2016), two overarching themes were developed to represent the characteristics and consequences of the staff cancer, with four subthemes representing the characteristics theme (passionate, insecure, controlling, and poor communicator) and five subthemes representing the consequences theme (poor mental health, team divide, team unification,

KEYWORDS

Informal roles; Cancerous staff; Critical realism; Arts-based conversational interview; Composite vignette

diminished performance, and increased attrition). Themes were represented through composite vignettes to protect participants' identities while showcasing their stories in a creative manner that resonated with the reader. The methodological approach allowed maltreatment to be discussed and represented in a sensitive manner and brought about two subthemes novel within athlete maltreatment literature, coach passion and insecurity. The presentation will conclude by introducing interventions sports psychology practitioners may use to work with potential negative staff members.

Cultural sport psychology service delivery as means to support athletes' treatment

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ABSTRACT

Maltreatment of athletes occurs through a variety of mechanisms, such as emotionally, physically, and psychologically abusive behaviours, neglect, and discrimination, and from multiple sports team members, including coaches, trainers, administrators, and high-performance directors (Kerr et al., 2019; Mountjoy et al., 2016). While maltreatment has generally been described as a purposeful act, with some scholars referring to it as non-accidental violence to showcase its volitional nature (Mountjoy et al., 2016), similar harm may also be the result of involuntary verbal or nonverbal behaviors (Schinke et al., 2006). Examples of these behaviors include cultural stereotypes from staff and players as well as the involuntary imposition of ethno-centric expectations onto athletes from diverse backgrounds (Schinke et al., 2006). These subtle forms of non-voluntary action may go unnoticed from staff and players of sports teams and lead to negative repercussions, such as poor health and mental health (Blume et al., 2012), for victim athletes who are often silenced given their marginalized cultures. These microinsults and microinvalidations are less understood within sports psychology and may constitute different forms of maltreatment, leading to varying effects on athletes. Cultural sport psychology (CSP) scholars argued the importance of exploring and incorporating intersectionality into sport psychology consulting as a way to holistically support athletes when addressing maltreatment (Fisher & Anders, 2019). Sport psychology practitioners (SPPs) can play an important role in reducing athletes' maltreatment by enhancing their professional knowledge about abuse and maltreatment and developing specific competence to mitigate it (Kerr & Stirling, 2019). However, the process of developing the cultural competence needed for this work is hindered by professional and systematic roadblocks (Quartiroli et al., 2021). This presentation will employ a CSP lens to maltreatment by theoretically linking examples and effects of different forms of non-intentional discrimination steeped within CSP literature,

KEYWORDS

Cultural sports psychology;
Cultural competence;
Athlete maltreatment

stemming from a lack of cultural awareness within sports team and sport supporting staff. The presentation will then be used to introduce how SPPs have the responsibility to advocate for athletes' wellbeing while engaging in their own self exploration to identify their biases, stereotypes, and professional development that may be impacting the consulting relationship.

Culturally constructing athlete maltreatment: an exploration of elite gymnast abuse through Australian, British, and Brazilian media representations.

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ABSTRACT

Elite gymnasts have recently garnered significant media coverage on widespread athlete maltreatment, providing researchers with a unique opportunity to investigate athlete maltreatment and the resulting consequences through media data. Media data is a source of cultural meaning, particularly as sociocultural identities are crafted and circulated for public consumption by media sites (McGannon et al., 2015). Through this presentation we excavate novel interpretations of athlete maltreatment as culturally constructed via the media's (re)presentations of athlete abuse narratives steeped in athletes' broader national cultural. We engaged in three instrumental case studies to interpret nuances of athlete maltreatment across different national cultures: 1) the British Gymnastics Men's and Women's Artistic Teams, 2) the Australian Women's Gymnastics Team, and 3) the Brazilian Men's Gymnastics Team. Investigating athlete maltreatment stories through a reflexive thematic analysis (Braun & Clarke, 2019) of media data facilitated our interpretation of interactions amongst athletes' sport sub-culture and national culture that culminated in culturally appropriated athlete maltreatment narratives. Media (re)presentations of athlete abuses are understood through these cases as a means to silence victims wherein the media aligns athlete stories with palpable victim characteristics for public consumption within the culture under study. Athlete victims who do not match with culturally accepted victimology, such as male abuse survivors or adult emotional abuse survivors, are excluded from the main narrative. Throughout the presentation we consider how athlete maltreatment narratives projected in varying cultural contexts converge and diverge highlighting a nuanced interpretation of athlete victimization. Practitioners are encouraged to consider sport systems holistically, across their practice area's national and sport sub-culture, to identify niched risks of athlete maltreatment and improve disclosure opportunities to promote athlete safety.

KEYWORDS

Athlete maltreatment; Elite athletes; Gymnastics; National culture; Sport culture

“What i need to feel safe in sport”: athlete speak about prevention of maltreatment

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ABSTRACT

A growing body of research exists on the harms that some athletes experience in sport, including sexual, physical and psychological abuse, neglect, and bullying. This research, coupled with the highly-publicized cases of athlete maltreatment, has stimulated the development of Safe Sport initiatives aimed at preventing and addressing experiences of maltreatment in sport. Sport organizations have developed policies and codes of conduct, complaint mechanisms, and educational programmes to increase a collective responsibility for addressing the prevention of athlete maltreatment. Despite the proliferation of these initiatives, research is lacking on athletes' perspectives regarding the prevention of maltreatment experiences. This study sought to explore athletes' views on the requirements for them to feel safe - physically, psychologically and socially. Current and retired national team athletes from Olympic and Paralympic sports were recruited to participate in this study. Using a social constructivist paradigm, each participant engaged in an online semi-structured interview beginning with photo elicitation to initiate discussion. Given the absence of previous research on this topic and the potentially sensitive nature of discussing safety, particularly with respect to psychological and social safety, photo elicitation was used to help generate discussion. At the start of the interview, each participant was asked to share a photo of themselves at a time in sport when they felt safe. The participant was asked to describe the photo and related context, why they chose it, what their feelings and thoughts were at the time, and what would be required to re-create that kind of experience. Discussion continued with questions about what the athlete would need in order to feel safe - physically, psychologically and socially, and what conditions in training are conducive to feeling safe? The semi-structured nature of the interview was important given the privileged positionality of the researchers and the recognition that some of the athletes with marginalized identities would have experienced systems of oppression that potentially impacted their feelings of safety. The findings were analyzed thematically, indicating a climate of caring, characterized by a belief that their inputs were sought, heard and incorporated into decision-making, was an important pre-requisite to feeling safe. For athletes from equity-seeking groups to feel safe, the demonstration of strong skills of inclusion by coaches and teammates were also important. Implications for the elicitation and incorporation of athletes' voices into the design and delivery of Safe Sport initiatives will be addressed.

KEYWORDS

Athlete maltreatment; Safe sport; Athlete-driven interventions; Photo elicitation

Importance of cross-cultural research on self-transcendence, self-improvement and self-enhancement goals in youth physical activity and well-Being

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ABSTRACT

This symposium focuses on cross-cultural research on the recently introduced Self-Transcendence (ST) goals construct alongside the widely investigated constructs of Self-Improvement (SI) and Self-Enhancement (SE) goals. In the introduction of this symposium, the importance of adopting selfless achievement goals, i.e., ST goals, as well as the conceptualization of the three SE-SI-ST goals alongside a taxonomy varying in degree of self-centeredness is presented. The significance and implications of some key-findings from recent research on the SE-SI-ST goals model (Papaioannou & Krommidas, 2020) is also underlined. It is also explained why these initial results require further verification from cross-cultural research on the SESIST goals model. Finally, the research topic of each of the following four presentations is briefly introduced before the description of the four presentations-studies.

KEYWORDS

mastery; performance; self-transcendence; sport; physical education

The Self-Transcendence, Self-Improvement and Self-Enhancement (SESIST) goals measure: measurement invariance, reliability, internal convergent and divergent validity across three cultures

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ABSTRACT

Purpose. The main aim of this presentation is to establish that across three cultures youth adopt all three major achievement goals varying in degree of self-centeredness, i.e., Self-Enhancement (SE), Self-Improvement (SI) and Self-Transcendence (ST). From a methodological point of view, the presentation has three aims. That is, to present evidence that across these three cultures the SE-SI-ST goals in Physical Education (PE) questionnaire has the following psychometric properties: (1) structural validity and measurement invariance across three cultures, (2) acceptable scale reliabilities, (3) internal convergent and divergent validity. **Methods.** Participants (N = 2404) were youth from Greece (N = 490 males, N = 596 females, N = 3 not indicated gender), Malaysia (N = 93 males, N = 204 females, N = 3 not indicated gender) and Portugal (N = 454 males, N = 550 females) who responded to the SESIST goals in PE questionnaire

KEYWORDS

self-transcendence; measurement equivalence; cross-cultural; achievement goals; physical education

(Papaioannou & Krommidas, 2020). Their age range varied from 10 to 17 years old in Greece ($M = 2.51$, $SD = 1.91$), from 13 to 17 years old in Malaysia ($M = 15.38$, $SD = 1.33$) and from 11 to 19 years old in Portugal ($M = 14.53$, $SD = 1.76$). Results. Findings from Confirmatory Factor Analyses (CFAs) supported a 5-factor model across all cultures. These factors captured three pure achievement goals (SE indicating “overcome others”; SI suggesting “improve myself”; ST denoting “improve others”) and two composite goals implying (1) both SE and SI goal adoption (i.e., both improve myself and overcome others) and (2) both SI and ST goal adoption (i.e., both improve myself and improve others). Multi-group CFA findings supported metric invariance across the three cultures. All scales had good internal consistency across all cultures. Partial correlations among goals controlling for the total score across all five goals suggested (1) strong positive correlations between pure and composite ST goals and between pure and composite SE goals for Greek and Portuguese but these correlations were low or not significant for Malaysian youth, (2) negative correlations between ST and SE goals across all three cultures. Across all three cultures, on average, youngsters scored higher on SI goals, followed by scores on ST goals, while their lowest scores were on SE goals. Conclusions. These findings support (1) the hypothesis that ST goal adoption is well alive across cultures, (2) the psychometric properties of the SESIST goals measure concerning measurement invariance, structural and internal convergent-divergent validity and scale reliability.

Self-transcendence goals, motivation, self-regulation, intentions to help others, physical activity and vitality across three cultures

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ABSTRACT

Purpose. The aim of this presentation is to present consequences of Self-Transcendence (ST) goal adoption in Physical Activity (PA) across Greece, Malaysia and Portugal. It was hypothesized that across these cultures, when all three main achievement goals [Self-Enhancement (SE); Self-Improvement (SI); ST] are assessed, ST goals account for unique variance in: autonomous motivation in Physical Education (PE), positive affect in PE, PA, self-monitoring and action planning in PA, vitality and intentions to help other to be physically active. **Methods.** Participants were the adolescents from Greece, Malaysia and Portugal described in the first study of this symposium. In addition to the SESIST goals questionnaire (Papaioannou & Krommidas, 2020) participants also completed the following measures: (1) The motivation regulations in exercise questionnaire (Markland & Tobin, 2004), (2) three PA measures (Booth, et al., 2001; Prochaska, et al., 2001; Saint-

KEYWORDS

self-transcendence; physical education; achievement goals; well-being; self-monitoring

Maurice & Welk, 2014) that were combined to one, (3) the self-monitoring (Sniehotta, et al, 2005; Theodosiou & Papaioannou, 2006) and action planning (Sniehotta, et. al., 2005) scales, (4) positive-negative affect in PE (Motl, et al., 2001), (5) vitality (Ryan & Frederick, 1997), (6) intentions to help classmates to be physically active outside of school. Results. All scales were valid and reliable. Across each culture, seven regression analyses were computed, using as Dependent Variables (DV) the following: (1) autonomous motivation in PE, (2) positive affect in PE, (3) PA, (4) self-monitoring in PA, (5) action planning in PA, (6) vitality and (7) intentions to help others to be physically active. In each analysis, Independent Variables were SE, SI and ST goals, age and gender. The results supported the hypotheses, implying that ST goals accounted for significant unique variance in each DV across all cultures. While in Greece and Portugal SI goals also accounted for unique variance in each DV (except of intention to help others to be physically active), the effects of SI were not significant in Malaysia. SE goals accounted for unique variance in PA in Malaysia but not in any of the six aforementioned DVs in Malaysia, or in Greece, or in Portugal. Conclusions. The sum of the findings underline the important role of ST in the promotion of motivation, PA and well-being in these countries. The findings from Malaysia might imply that ST goals might be even more important than SI goals in relatively collectivistic cultures. Further cross-cultural research involving more collectivistic countries is needed to establish this assumption.

Antecedents of self-transcendence goals across three cultures: motivational climate, family and friends' support in youth physical activity settings

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ABSTRACT

Introduction. This presentation focuses on the role of some known antecedents of achievement goals and motivation in the formation of Self-Transcendence (ST) goals across three cultures. Purpose. Specifically, we investigated the role of satisfaction of psychological basic needs, motivational climate emphasizing mastery and performance avoidance, as well as family and friends' support of adolescents' involvement in sport. Methods. Participants in this study were the Greek, Malaysian and Portuguese adolescents that have been described in a previous presentation of this symposium. They completed the SESIST goals questionnaire (Papaioannou & Krommidas, 2020) and the following measures: (1) Satisfaction of the basic psychological needs of autonomy (Standage et al., 2005), competence (McAuley, et al. 1989) and relatedness (Richer & Vallerand, 1998), (2) PE teacher's emphasis on Mastery and Performance Avoidance

KEYWORDS

self-transcendence; achievement goals; basic needs; teacher; family and friends

goals (Papaioannou, et al., 2007), (3) family and friends' support (Dewar et al, 2013). Results. Across each culture we computed five regression analyses using as Dependent Variables (DVs) the three pure achievement goals [Self-Enhancement (SE); Self-Improvement (SI); ST] and the two composite achievement goals (SE/SI and ST/SI) described in a previous presentation and in Papaioannou and Krommidas (2020). Nine Independent Variables (IVs) were entered as follows: satisfaction of the needs of autonomy, competence and relatedness, perceived PE teacher's emphasis on mastery and performance avoidance goals, family and friends' support, as well as age and gender (i.e., to control for age and gender effects). Across all cultures, satisfaction of the need for competence and teacher's emphasis on mastery goal were significant predictors of ST and SI goals, as well as of the composite SI/SE goal. In the Greek sample, satisfaction of the need for relatedness accounted for unique variance in ST goals. Standardized beta weights concerning the regression of ST goals on family and friends' support were very low ($\beta < .15$) across all cultures, although significant in some cultures (e.g., Greece). Conclusions. These findings underline the importance of motivational climate emphasizing competence and learning in the formation of ST goals across different cultures. Further research is required with regard to how motivational climate affects the formation of ST goals.

Incremental validity of self-transcendence goals in youth physical activity settings across three cultures

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ABSTRACT

Purpose. The aim of this presentation is to provide evidence that Self-Transcendence (ST) goals have unique importance in achievement goals research irrespective of the achievement goal measures that are used. Across three cultures we investigated the assumption that ST goals account for unique variance in various achievement goal outcomes in Physical Activity (PA) when Self-Enhancement (SE) and Self-Improvement goals from different measures are employed. **Methods.** The Greek, Malaysian and Portuguese participants that have been described in a previous presentation of this symposium completed the following measures: (1) The SESIST goals questionnaire (Papaioannou & Krommidas, 2020), (2) the TEOSQ in PE (Duda & Nicholls, 1992), (3) the instruments investigating achievement goal outcomes reported in the second study of this symposium. We were particularly interested in the task orientation scale of Duda and Nicholls (1992) because it measures both reason and aim while the SESIST goals measure captures only aim, which is in line with Elliot's & Maryama's (2008) suggestions. **Results.** Initial regression

KEYWORDS

task; self-transcendence; vitality; intrinsic motivation; positive affect

results revealed that across all cultures, ST goals accounted for unique variance in task orientation over and above SI and SE goals, indicating that task orientation also captures reason that might be associated with cooperative-helping behavior. Next, we run the same regression analyses as those described in the second study of this symposium but here also controlling for task and ego scale scores. The results revealed that across all cultures, after controlling for age, gender, task, ego orientation, SI and SE goals effects, ST goals still accounted for significant unique variance in autonomous motivation, positive affect in PE, self-monitoring, vitality and intentions to help others to be physically active. In the Greek and Portuguese samples, ST goals also accounted for statistically significant unique variance in PA and action planning. Conclusions. These finding underscore the unique role of ST in achievement goals literature. ST goals have unique importance in personal motivational outcomes such as physical activity, positive affect and vitality, etc., because the latter are also determined by the quality of one's interactions with others. Expectedly, the largest explained variance due to ST goals concerned intention to help others. We expect strong impact of ST goals on motivational outcomes involving cooperation, teamwork, peer tutoring etc. Further cross-cultural research involving large number of cultures is necessary to investigate the applications and implications of ST goal adoption in PA settings.

Research to practice experiences of working with national organisations to support parents in sport

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ABSTRACT

How the field of sport psychology enables research findings to consistently make a difference in the real world of organisational practice remains an important, yet relatively underexplored question. Holt and colleagues (2018) draw attention to the gulf between research evidence from scholarship and the practical integration and tailoring of knowledge to guide and inform organisations and their stakeholders to optimal functioning. In an applied discipline such as sport psychology, knowledge translation is critical to the health of the profession, yet it is not without its challenges. Knowledge translation refers to dynamic and iterative process involving interactions between researchers and knowledge users that can improve the application of knowledge to provide more effective policies, programs, and practices (Straus, Tetroe, and Graham, 2009). The purpose of this symposium is to illustrate the factors, processes and experiences that represent initiatives to translate research into practice and policy within the field of sport parenting. Professor Camilla Knight will share insights into her experiences of working with a range of different organisations (e.g., the Child Protection in Sport Unit;

KEYWORDS

youth sport; tennis; parents; sport organisations

Rugby Football Union and Sport New Zealand) to help shape policies, practices, and overall approaches to enhancing parental involvement in youth sport. Professor Chris Harwood will reflect on the implementation process of a national tennis organisation's parent education strategy based on his published research within the sport. Subsequently, Ella Williams will share a case study from her research into parent-coach and player triads from her doctoral project with a national and international tennis federation. Finally, Professor Paul Wylleman will serve as a discussant and reflect on his experiences working with national organisations in the context of youth sport.

Promoting positive parental involvement in practice: reflections from a decade of working with key organisations and stakeholders

Camilla Knight

Swansea University and University of Adger

ABSTRACT

Over the last few decades there has been a rapid increase in the amount of research examining parental involvement in youth sport (Dorsch et al., in press). Such research is important for a number of reasons, not least to guide the work of sports organisations and practitioners who are seeking to enhance the involvement of parents in youth sport. In fact, sports organizations have indicated that parenting, including enhancing parental involvement and providing education to parents, is one their priority areas for research (Holt et al., 2018). As such, it is perhaps unsurprising that over the last decade or so practitioners and researchers have had numerous opportunities to work with different organisations to help them better understand and subsequently enhance parental involvement in sport. The purpose of this presentation is to share insights from the experiences of one such research-practitioner as she attempted to utilise research to enhance the policies and practices of different organisations. Based on a decade of working with charities (e.g., Child Protection in Sport Unit), national governing bodies (e.g., Rugby Football Union; Welsh Rugby Union), and National Sporting Organisations (e.g., Sport New Zealand), this presentation will focus on strategies to enhance organisational buy-in and increase the efficacy of such work, as well as numerous lessons that have been learnt and challenges that can be encountered when seeking to work with sports organisations. Particular emphasis will be placed on understanding the specific needs of each organisation, developing long-term plans pertaining to sport parenting, the importance of maintaining consistent messaging, and the challenges associated with providing clear guidance, while accounting for the complexity of this area. The presentation will conclude with a number of suggestions both for practitioners and researchers seeking to

KEYWORDS

parental involvement; sport organisations; youth sport

work with sports organisations in the future, as well as a number of areas requiring further research to further enhance the quality of the applied work in this field.

Caring for the forgotten stakeholder: implementing the lawn tennis association's national parent education strategy

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ABSTRACT

Parents are a key agent in initiating children's involvement in sport, encouraging their long-term participation, and influencing the quality of their experience in competition (e.g., Côté, 1999; Knight & Holt, 2014). Ongoing calls for parent education and support-based interventions have been answered in recent years with Thrower, Harwood and Spray (2016, 2017, 2019) investigating the educational needs of parents and translating these findings into successful face-to-face and online interventions. As a result of this evidence-based research, the authors collaborated with the Lawn Tennis Association (LTA) in the UK to develop and drive the implementation of a multi-dimensional national parent education strategy. In this presentation, the lead author will illustrate the knowledge translation and tailoring processes that have represented the last four years of the LTA strategy, including examples of promotional and informational resources, videos and educational workshop content. Importantly, challenges and realities of research implementation (Nilsen, 2015) to achieve a national scale-out through a trained workforce of tutors will be appraised. This presentation will also address the responsiveness of the national governing body to COVID-19 in the adaptation of the delivery strategy to a six month online webinar series, and its ability to reach and educate non-parent stakeholders (e.g., referees, coaches) about the programme. With other 2000 UK parents engaged through the strategy, we will present the lessons learned through the workshop feedback received and the ongoing progressions and tailoring as a result. This includes insights into a longitudinal research evaluation conducted as part of our responsibility as scientist-practitioners. Finally, we will outline how the LTA strategy led to international collaboration with the International Tennis Federation and subsequent work to scale out of research-informed education to youth tennis parents on a global scale.

KEYWORDS

parents; youth; tennis; intervention

Examining the Parent-Athlete-Coach (PAC) relationship in youth tennis: a collective case study

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ABSTRACT

Youth sport is an inherently stressful environment both for athletes and their parents and coaches. Whilst athlete-centred relationships have generated interest from scholars, the parent-athlete-coach (PAC) relationship has received limited enquiry. Through the implementation of the LTA's parent education strategy, the challenges faced by parents in relation to their support needs from coaches emerged. This was particularly focused around the parent's role at competitions in support of their child given the limited attendance by coaches at these lower level and grass roots events. Therefore, assisted by a partnership between the LTA and ITF to advance research on parents within tennis, doctoral research was funded to understand the factors, processes, and outcomes associated with the PAC triad in youth tennis. As part of a broader interrogation of PAC triads across three developmental stages (i.e., U10's, U12's, and U17's), this presentation will take an in-depth focus to one unique PAC triad. A collective case-study design was employed with a triad which included one mother, one female coach, and two female athletes in the U10's and U12's stage of development. Data collection tools included semi-structured interviews with each triadic member, pre-interview description tasks, athlete diagrams, and conversational threads between parents and coaches. An interpretivist approach informed the use of reflexive thematic analysis as the analysis procedure for this study. Findings illustrated how the parent and their relationship with the coach was central to the cohesive functioning of the triad which was evidenced through open and collaborative communication, contextualised feedback, and role support and reinforcement. Overall, the PAC triad was perceived to be critical in promoting positive experiences with intricate and complex processes that occur between parents, athletes, and coaches which should be considered when designing suitable and practical data collection tools.

KEYWORDS

relationships; tennis; coaches; parents

A holistic and whole-person perspective on athletes' lifelong development

Simon Defruyt

Vrije Universiteit Brussel

ABSTRACT

Athletes' development is no longer looked at purely from an athletic performance perspective. Rather, research looks at athletic development from a whole lifespan and holistic perspective (Wylleman, 2019; Wylleman et al., 2020). Furthermore, in looking at athletes' development, research is increasingly taking into account both athletes' and other stakeholders' perspectives (e.g., coaches, parents; Wylleman & Rosier, 2016). Research shows that the use of evidence-based monitoring and

KEYWORDS

Holistic; Transitions; Support staff; Development; Competencies

evaluation tools to measure specific aspects of athletes' whole-person development, has become crucial in this regard and can facilitate clear communication between athletes and support staff with regard to athletes' personal development. First, this introductory presentation, will provide insight in holistic athletic career (HAC) model, which describes athletes' development at different levels of development, namely the athletic, psychological, psychosocial, academic/vocational, financial and legal development. The different layers of the model and the challenges and barriers associated with the most challenging transitions (e.g., junior to senior, transition to the post-athletic career) will be discussed. Secondly, this presentation will provide insight in the development and application of some crucial evidence-based measurement instruments that can help to measure specific aspects of athletes' whole-person development. More specifically the development and initial validation of the Dual Career Competency Questionnaire for Athletes (DCCQ-A) (De Brandt et al., 2018) and the Athletes' Competency Questionnaire for Employability (ACQE; Smismans et al., 2020) will be discussed. Both instruments can help athletes and support stakeholders to monitor, evaluate and optimize competencies that are required to combine elite sport and education (DCCQ-A) or the competencies athletes' can transfer from elite sport to labour market (ACQE). Thirdly, this presentation will introduce the three main presentations of this symposium, that cover (1) the early whole-person development (presentation by Suzan Blijlevens), (2) the coping with wider challenges during the performance phase (presentation by Koen De Brandt), and (3) the transition to the post-athletic career (presentation by Sofie Smismans). Finally the discussant (Jolan Kegelaers) will already be introduced, by providing a first insight in the key themes that will form the structure of discussions during this symposium: (a) athletes lifelong holistic development, (b) the main challenges and barriers in their development, (c) the competencies required to cope with those challenges, (d) the role of the environment (e.g., coaches) in facilitating athletes' whole-person development.

The development and implementation of the learning line performance behaviour

Suzan Blijlevens and Paul Wylleman

Vrije Universiteit Brussel

ABSTRACT

Introduction. Based upon scientific research of Blijlevens (2019), the Dutch Olympic Committee (TeamNL) developed a general learning line for performance behaviour, which describes 14 psychological competencies that are required by high-potential and elite athletes. However, when these competencies are required differs throughout the athletic career (Blijlevens, Elferink-Gemser, Wylleman, Bool & Visscher, 2018) and for different sports. Furthermore, coaches play a central role in enhancing athletes'

KEYWORDS

Competencies; Development; Coach support; Performance behaviour

performance behaviour by developing their psychological competencies (NOC*NSF, 2021). Purpose. Therefore, to optimally apply the general learning line to each specific sport, TeamNL aimed to create (1) sport-specific development lines and (2) a network of experts to train and coach the coaches in enhancing the psychological competencies of their athletes. Within this presentation, Suzan Blijlevens, will explain the way this was done and share her best practices of implementing the learning line within practice so far. Methods. For each sports federation, minimum three focus groups were held with coaches of high-potential and elite athletes. The coaches discussed (1) the challenges that athletes experiences within their sport throughout the athletic career and (2) what behaviour they need to show to deal with those challenges. This was described in a sport-specific development line. Based upon the sport-specific development lines, together with the federation and coaches, an annual plan was made for implementation in which TeamNL experts were involved in educating, training and coaching the way coach stimulate the competencies within their athletes. Results. By doing so, TeamNL created sport-specific development lines for more than 25 sports (or disciplines). Furthermore, there now is a network of experts (sport- and clinical psychologists, together with lifestyle coaches) throughout the Netherlands who work together in the coaching of elite coaches in order to enhance athletes' psychological competencies. Conclusion. TeamNL's way of working offers a stable network of experts that work sport-specific, on a daily basis and within the context of elite sports with coaches in order to enhance athletes' psychological competencies. Further reflections, best practices and challenges for the future will be shared.

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Impact of COVID-19 on flemish athletes' lives

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ABSTRACT

For many athletes, COVID-19 has presented itself as a barrier to the pursuit of athletic excellence, while for others the pandemic has been a facilitator to explore different opportunities and directions in life. COVID-19 has affected the lives of athletes in different

KEYWORDS

corona; dual career; holistic development; mental health

ways and domains, including changes and challenges in the athletic (e.g. adapted training conditions, postponed or cancelled competitions), academic (e.g. accelerated or delayed study duration), vocational (e.g. switch from professional athlete to combining elite sport with work), psychological (e.g. setting new goals, increased anxiety and uncertainty), psychosocial (e.g. more time at home, isolation), financial (e.g. changed income and funding) and legal domains (e.g. traveling restrictions). The aim of this research was to monitor athletes' life satisfaction and perceived impact of COVID-19 during the entire pandemic period. In total, 219 Flemish athletes (mean age = 23; 49% female; 62% students) completed the Holistic Monitoring Questionnaire (HMQ; De Brandt et al., 2019) on different time points during the pandemic. New longitudinal data is still being collected until the end of the pandemic. The HMQ measures athletes' satisfaction about different aspects of life (i.e. sport, study, dual career, social life, physical health, mental health, wellbeing, sleep, recovery, nutrition, financial situation) and the perceived impact of COVID-19 on these life aspects (i.e. from very negative to very positive impact) on two five-point scales. In addition, open responses were collected about the reasons why athletes are (not) satisfied and perceive a certain impact. Results over the entire measurement period indicated that athletes, on average, were most satisfied about their physical health, recovery and sport, and least satisfied about their social life and sleep. Satisfaction about social life significantly increased (+40%) over the course of the pandemic. Team athletes consistently perceived the impact of COVID-19 on their recovery, sleep and mental health as less negative compared to individual athletes. Specifically for mental health, results showed that 28% experienced a negative impact of corona on mental health, expressed in increased anxiety and worry, feelings of uncertainty, lack/loss of control, and reduced motivation. On the contrary, 48% of athletes experienced no impact on mental health, and 16% reported a positive impact on mental health (e.g. reduced stress levels, increased control and better life balance; more time to invest in maintaining mental health). Further quantitative and qualitative analyses will be performed and applied recommendations will be presented during the conference.

Coaches' perspectives on athletes' transition to a new, post-athletic career

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ABSTRACT

Athletes' transition into a new, post-athletic career represents a challenging part of athletes' careers. Due to the diverse combination of demands that athletes may face when retiring

KEYWORDS

Dual Career; Coach; Elite Sport; Post-athletic Career; Holistic Perspective

(e.g., adjustment to the new social status, changing social network, physical deterioration), an increasing demand is being placed on athletes' sporting entourage to provide athletes the necessary support both during and after the sporting career (e.g., Gledhill & Harwood, 2015, Wylleman et al., 2020). While research is clear on the value of coaches in supporting athletes throughout different transition processes, studies investigating coaches' perspectives on athletes' career development towards a new, post-athletic career is scarce. This study therefore aimed to gain an insight in coaches' perspectives on athletes' preparation for and transition to a new, post-athletic career. A qualitative study design using eighteen semi-structured interviews with coaches was adopted. Participating coaches included active or former coaches (100% male) who supervise or supervised elite athletes competing at minimum national level in team sports (56%) or international level in individual sports (44%). Inductive thematic content analysis (Braun & Clarke, 2006) allowed us to gain a detailed picture of meaningful patterns within coaches' perspectives on supporting athletes in their preparation for and transition to a new, post-athletic career. While most of the coaches believed that certain preparation pathways, such as a dual career 'elite sport and study or work' hold multiple benefits (e.g., competency development, sense of security, welcome distraction from the elite sport demands), others expressed their fears of a dual career distracting elite athletes too much from their sporting goals. Nevertheless, the majority of coaches indicated to be willing to support athletes in their preparation for a new, post-athletic career. Examples of support indicated by the coaches were, amongst others, adapting the timings of training moments to an athlete's study scheme and using the coach's network to facilitate an athlete's job search. However, while reaching out to elite athletes in their preparation for a new, post-athletic career seemed obvious to most coaches, it was perceived that it is not a coach's responsibility to foresee guidance and help during the transition itself. Generally, coaches found they lack the necessary competencies to adequately support athletes in the transition phase. Study findings can serve as a basis to raise awareness within coaches on the importance of athletes' holistic development and to develop methods for coaches on how to integrate such holistic perspective in their coaching.

Reflections on the holistic and whole-person perspective on athletes' development and competencies

Jolan Kegelaers

Vrije Universiteit Brussel

ABSTRACT

Dr. Jolan Kegelaers will conclude this symposium by discussing and offering reflections on the different presentations. Overall, it can be stated that four key themes emerged throughout the different presentations. First, these presentations highlight the importance

KEYWORDS

holistic development; career transitions; competencies

of recognizing athletes' holistic development and competencies. Athletes do not simply develop just as an athlete, but simultaneously face developmental challenges in different life domains, including the academic (cfr. presentation Koen De Brandt) or vocational (cfr. presentations Sofie Smismans) domains. Second, such holistic development does not occur linearly, but rather is characterized by specific career phases and transitions, each with its own specific demands and barriers. Such transitions can be normative and predictable (cfr. presentation Sofie Smismans), but might also include more dynamic, less predictable non-normative challenges (cfr. presentation Suzan Blijlevens). Third, athletes may require specific psychosocial competencies to adequately prepare for and cope with these multilevel challenges. Efforts to develop such competencies may provide a crucial preventive strategy to help athletes maintain optimal holistic development. Nevertheless, scholars and applied practitioners should still recognize that these specific relevant competencies may be dependent upon type of sport (cfr. presentation Suzan Blijlevens) or could differ depending on the specific challenges within the different developmental domains (cfr. presentations Koen De Brandt). Finally, coaches may play an important role in the development of such crucial competencies, both throughout the athletic career (cfr. presentation Suzan Blijlevens) as well as in preparation for the post-athletic career (cfr. presentations Sofie Smismans). As such, in future research and applied work, sport psychologists should focus on providing insight in how coaches can be empowered and supported to facilitate positive psychosocial development in their athletes.

The meaning and impact of sport in the lives of individuals forced to flee their home country

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Laurentian University

ABSTRACT

At the end of 2019 there were 33.8 million people living forcibly displaced from their home country (UNHCR, 2020). Asylum seekers and refugees' (i.e., forced migrants) mental health is often negatively impacted due to traumatic incidents faced during their journeys to safety (George, 2012; Steel et al., 2006). Governments of countries receiving forced migrants have proposed sport engagement as one method through which to support their well-being and integration into receiving communities (European Commission, 2018; Sport Australia, 2018; Sport Canada, 2012). However, sport contexts can also be settings in which societal practices of exclusion, discrimination, exploitation and racism manifest (Michelini, 2020; Middleton et al., 2020; Spaaij et al., 2019). As such, feeling culturally, psychologically, and emotionally safe has been posited to be an important aspect of sustained sport engagement and comfortableness engaging in intercultural interaction (Middleton et al., 2020). Recognising that what safety

KEYWORDS

asylum-seeker; inclusion; integration; refugee; safety

means is a subjective decision making process (Bergholz, 2016), this symposium presents three examinations of forced migrants' involvement in sport in different receiving communities and different types of sport. The symposium will begin with insight into the importance of sport for some refugee elite athletes prior to, during, and after their re-settlement. The impact of forced migration in their lives and the dynamic nature of their re-settlement during which other facets of their lives may take precedence, can result in changing ambitions related to, and disengagement from, sport. The symposium will continue with a presentation related to how co-ethnic sport engagement (i.e., for people of the same ethnic background) can provide young forced migrants with a localised sense of inclusion and safety that they do not experience in other life domains contributing to an increased sense of agency. While co-ethnic sport clubs have distinct advantages for some young forced migrants, they are not an option for youth who arrive in receiving communities with few ethnically similar individuals. Hence, the third presentation will show how forced migrant youth may be engaged in a collaborative process of developing community sport programs that provide a space for youth from all backgrounds to engage in shared learning and develop connections in and outside of the sport context. The symposium will conclude with a critical discussion as to how in-depth, interdisciplinary qualitative insights developed over a prolonged period of time with forced migrants can provide transferable insights for sport psychology researchers and practitioners.

Elite sport and forced migration: a study of sport careers of 'refugee athletes'

Enrico Michellini

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ABSTRACT

Several Syrian elite water polo players migrated to Europe following the outbreak of the Syrian civil war. After resettling in different European countries and resuming their sport careers, they took part as a team in different water polo events. While they agree that sport helped them integrate in Europe, their biographical trajectories differ significantly. This presentation explores different aspects of the sport careers of some of these athletes. To assess this topic, a longitudinal (2016–2018) ethnographic research (Marcus, 1995) was carried out. The presentation will focus on findings that stem from 21 interviews, an approximate 500 hours spent in situations in which most of the water polo players were together, and additional time spent with individual participants. The data collection process resulted in the generation of transcriptions (interviews) and field notes (observations), which were complemented with secondary sources (documents). These data sources were analysed through a qualitative content analysis approach (Schreier, 2014) and interpreted through the interactional concept of socialisation theory (Hurrelmann, 1988/

KEYWORDS

biography; refugee; socialisation; sport

2009). The results of this project (Michelini, 2018, 2020, 2020-Submitted) show that the influence of war-related events on sport careers is profound and reciprocal. The resolve to engage in sport influenced important decisions before, during and after resettlement. However, through this study the findings also revealed that the high sport ambitions of water polo players following resettlement changed and generally declined over the three-year period during which the project was conducted. To remain engaged in sport, the refugee athletes developed different strategies to cope with their sport ambitions in the social context after their resettlement. While the possibility of pursuing a professional career in water polo is still technically open, only one of the participants in the study is still engaged in elite sport. The commitment and sacrifices required to remain engaged in playing water polo at an amateur or elite level were impractical for many of refugee athletes. As a result, for some athletes the prioritisation of sport over other life domains (e.g., education, employment) impeded, rather than facilitated, their successful inclusion in other contexts. This research sheds light on some psychosocial phenomena that need to be further considered by including additional groups of elite and super-elite refugee athletes and sport disciplines. As time plays a crucial role, additional information should be generated by following the developments of refugee athletes' sport careers over a longer period.

Refugee-background youth's experiences of social inclusion in co-ethnic sports clubs and events

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ABSTRACT

The role that sport participation with people from similar ethnic backgrounds (i.e., co-ethnic) plays in newly arrived migrants' and refugees' acculturation in countries of resettlement is contested. Co-ethnic sport has been framed in Western political and policy discourse as undesirable and 'working against integration'. However, emerging evidence shows that co-ethnic sport engagement in clubs or events should not automatically be viewed as working against the policy objective of integration because it can fulfil important social and emotional functions for forced migrants. Participating in co-ethnic sport contexts can also have distinctive advantages over mainstream sports clubs, such as enabling a safe space where participants can experience a sense of agency and belonging. This presentation examines co-ethnic sports clubs and events as community-based settings where young people from refugee backgrounds can experience social inclusion. The analysis draws on seven years of ethnographic fieldwork with refugee-background communities at sports clubs and events in Australia and the Netherlands. The study comprised direct observations and over 100 interviews with

KEYWORDS

acculturation; football; forced migration; integration; sport

players, coaches, volunteers, and representatives of refugee community organisations. In both settings, research protocols and interview guides were developed in close consultation with members of the refugee communities to ensure cultural appropriateness and relevance. Interview transcripts and field notes were analysed using thematic analysis techniques. The results indicated that participants experience multiple forms and levels of inclusion in co-ethnic sports clubs and events, ranging from (relatively fleeting) micro-level encounters to social bonds that transcend the sporting context. These experiences of inclusion intersect with, and are shaped by, factors such as gender, ability, and pre-existing sporting experience. The findings suggest that co-ethnic sport engagement in clubs and events can facilitate a sense of localised inclusion (in a team, club, or community), a temporary escape from stress, social exclusion, and discrimination experienced in other life domains, and a sense of personal power and agency for young people with refugee backgrounds. Co-ethnic sport engagement can also assist refugee youth in navigating a positive identity that embraces their cultural heritage and hybridity as a strength, as opposed to an assimilationist imperative of having to leave one's identity at the door, which can sometimes be found in mainstream sports clubs.

Collaborating with male youth forced migrants in the development of socially just and inclusive community sport programs

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ABSTRACT

Over the past six years, 41.5% of resettled refugees and 23% of asylum claimants arriving in Canada have been under the ages of 18 and 14 respectively (IRCC, 2021a; 2021b). While most individuals forced to flee their homes face the spectre of trauma in their lives, the journey to safety can be particularly harmful for youth (WHO, 2017). Engaging forced migrant youth in sport has been proposed as one way of supporting their physical and mental well-being (Hurly, 2019). Sport has also been posited to help forced migrant youth develop a sense of belonging to their host community (Lugueti et al., 2021; Whitley et al., 2021), which can contribute to their psychological resilience (Pieloch, 2016). However, sports do not naturally help youth develop connections to others, they can also be contexts in which societal exclusionary practices manifest (Hatzigeorgiadis, 2013; Spaaij, 2015). One proposed method of helping youth connect to others through sport has been co-ethnic sport programs; however, for forced migrant youth arriving in smaller communities in Canada these are often not an option. Further, previously shared stories from

KEYWORDS

community-based participatory action research; football; informal sport; integration; resilience

forced migrant youth have revealed a desire to engage in sport with host community youth so as to aid their recovery from pre-relocation trauma and the continued development of their identities (Lugueti et al., 2021). This presentation will examine a community-based participatory action research (CBPAR) approach to developing inclusive community sport programs in collaboration with 22 male forced migrant youth. Drawing upon their expertise, excerpts from a collaboratively developed polyphonic (i.e., multi-voiced) vignette will be shared highlighting the importance of soccer in their lives, the challenge and opportunity provided by trying new sports, and the role sport played in helping them develop connections in and through sport. Insights from the youths' stories regarding the importance of informal sport and a focus on the development of relationships, rather than individual development, will be discussed and examined in relation to how sport psychology consultants and coaches may foster socially just and inclusive sport contexts. The presentation will conclude with recommendations for how researchers may engender impactful and socially just localised change through work with oft-marginalised people whose voices, if provided space to be heard, can challenge the status-quo.

Transnational migration in sport: what we talk about when we talk about cultural transition in a transnational context

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ABSTRACT

In a transnational society, the everyday life is sustained by social relations that extend our cultural milieu beyond the boundaries of nation-states. The movement of objects, human and non-human subjects, and ideas and cultural practices within transnational networks transforms their encoded meanings as receivers engage in an interpretive process through which meanings are reinscribed into new forms of social and cultural organization. In addition to meaning reconstruction, social repositioning of moving subjects/objects, as well as the negotiation of their mobile practices, are enacted through social relations. According to Ryba, et al. (2016), these psychosocial processes constitute the micro-level generative mechanisms that underpin a cultural transition in transnational migrations. The purpose of the current symposium is to unearth the complex social and psychological organization of the cultural transition process which is mostly possible only indirectly albeit being based on empirical observations. Hence, firstly, the presenters will show experiential diversity of moving populations and receiving communities through their empirical data. Secondly, the symposium organizers will act as the discussants to facilitate the presenters' reflections on how their findings can be used, by whom, to what extent, and in what contexts. The symposium

KEYWORDS

Transnational diversity; cross-border exchanges; cultural transitions; cultural sport psychology; cultural praxis

includes four accepted submissions from the Psychology of Sport and Exercise Special Issue on “Transnational migration in sport and exercise.” After the introduction to the symposium’s theme and objectives, the first presenter will expose silenced aspects of a successful transnational career through a narrative bricolage based on two women academics’ life stories. The second presenter will continue with a multi-voiced interpretive account of the storied life shared by 22 immigrant male youth with a focus on the changing meaning of sport in forced migration. The third presenter will elucidate the impact of transnational migration on the functioning of multicultural teams in men’s elite football based on a 26-month ethnographic study. Finally, the fourth presenter will problematize the cultural appropriation of mindfulness in the power laden academic discourses especially when concepts and practices migrate from East to West.

Negotiating a transnational career around borders: women’s stories in boundaryless academia

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ABSTRACT

The present study aimed to give voice to two women sport scientists life stories to centralize the challenges and coping strategies their careers entailed and to enlighten our understanding on the lived experience and meaning of academic migrating. The research question asked, what does a life of professional migrations look and feel like for women sport scientists? Our objective was to delve into the transnational mobility experiences of women academics and bring to the fore career journey elements which are typically ‘closeted’ and/or ‘swept under the rug’. The participants shared their stories through face-to-face in-depth interviews and ongoing virtual conversations which we, then, re-storied in one creative non-fiction story blending the two women’s lives to safeguard their anonymity. The theoretical, methodological, and interpretive dimensions of bricolage informed data collection, analysis, interpretations, and write up. The bricolage is a critical eclectic view of research where the bricoleur (i.e., researcher) borrows strategies from various disciplines and traditions depending on what the unfolding context of the research occasion requires (Steinberg & Kincheloe, 2012). The literature on transnationalism and academics as mobilised professionals helped us bring to light ‘silenced’ elements of the academic narrative as forms of women’s professional development in sport sciences that are not part of ‘official’ narratives of career building were uncovered. In the story we tell, the academic entrepreneur ideal is somewhat disrupted as migration aside from thrills appears to also involve rough and complex negotiations and challenges. In building transnational careers, experiences and lessons learned informed

KEYWORDS

Transnational career; women; academia; sport science; negotiating

subsequent decisions and relocations of theirs while work and home were a state of mind and sense of comfort for the two women who relentlessly swap priorities between home and work. Negotiating, redirecting, and accepting are the key approaches for their work and home lives, while staying true to self and values has great essentiality for these women. Particularly, we heard how negotiating enabled them to develop, to endure, and too maintain their values as a meaningful process for paving the way and handling boundaries. Redirecting their stories into stories that work for them is their way of coping, while accepting is an essential approach for living through heavens and hells and staying true to self. Our findings destabilise the post-feminist discourses promising that women can 'have it all' and remind of the structural and cultural barriers that women must negotiate in crafting careers while also caring for their families and themselves.

The changing meaning of sport during forced immigrant youths' acculturative journeys

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ABSTRACT

Every day 37 000 people are forced to flee their homes (UNHCR, 2019). Engaging in sport has been proposed as a manner through which those forced to flee their homes (i.e., forced immigrants) may improve their holistic well-being, feel a connection back to their home country and communicate with culturally dissimilar host community members (Ley et al., 2018; McDonald et al., 2019). However, sport can also be a context in which broader societal exclusionary and discriminatory practices manifest (Agergaard, 2018). As such, fostering an inclusive and integrative sport context requires understanding the different meanings sport may hold for forced immigrants and the way in which these meanings change as they continuously navigate their lives in communities in which they have resettled. This presentation focuses on the stories shared by 22 forced immigrant male youth which reveal the changing meaning and role of sport during their acculturative journeys in different host communities. Stories were shared by youth through arts-based conversational interviews held at the onset of a community-based participatory action research (CBPAR) project aimed at collaboratively developing socially just and inclusive community sport programs. Grounded epistemologically in social constructionism, a polyphonic (i.e., multi-voiced) vignette was developed to portray an interpretive account of the stories told by youth developed through a reflexive thematic analysis. During the presentation excerpts will be shared from the three-scene vignette which storied the role sport played, and continues to play, in forced migrant youths' life journeys. The opening scene brought to light stories related to

KEYWORDS

Acculturation; forced migration; male youth; community sport; inclusivity

home country sport involvement. The second scene depicted how sport was engaged in during their journey to their current host community. The third scene completed the story focusing on how youth engage in sport during resettlement in their host Canadian community. The uniqueness of forced immigrant youths' stories as compared to immigrant athletes, as well as the importance of safety and what it means to feel safe in sport for forced immigrant youth as shown through the vignette will be discussed. The presentation will conclude with proposed strategies researchers and practitioners alike may consider using when working with forced immigrant youth, including engaging in and developing relationships through storytelling and extending interest in youths' lives beyond the sporting context and inclusive of their family members.

Applying a relational lens to ethnographic inquiry: storied insight into the inner workings of multicultural teams in men's elite football

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ABSTRACT

Internationalization of football and the resulting cultural diversification of teams has brought about new challenges for players and the game's stakeholders alike. This 26-month ethnographic study examines the impact of transnational migration on the functioning of multicultural teams in men's elite football, and explores the cultural transition experiences of migrant players from the relational perspective of receiving football environments. A researcher-practitioner approach was adopted to investigate two elite European football clubs during the course of two complete seasons. Over 80 male participants from 18 different countries were involved in the approximately 1200 hours of field observation (e.g., practices, games, closed-door meetings, etc.) and 50 hours of transcribed interviews. Detailed field notes and interview data were thematically analysed, followed by a narrative analysis of structure and form. Finally, the genre of ethnographic creative non-fiction was employed to present the findings as three stories of lived experience. The authors apply a relational lens to the study of cultural transitions, thus illuminating the centrality of relations in the daily functioning of multicultural teams embedded in transnational networks and spaces. The stories show the complex interactional dynamic between migrant players and members of the receiving environment in their common pursuit of sporting results whilst managing multiple constraints. Constrained agency is exposed as a collective phenomenon guiding group/individual behaviours and shaping (sub)cultures in elite football. The study also explores the hows of cultural transition by engaging with double temporality (Ricoeur et al., 1983) to facilitate meaning-

KEYWORDS

Cultural transitions; transnational athletes; cultural sport psychology; creative non-fiction; narrative inquiry

making through narrative in a concurrent backward/forward motion. This temporal dimension highlights how transition experiences are internalized as relational patterns that draw on earlier pre-narrative experiences, relevant not only to players but also clubs. By adopting a phenomenological approach, the authors propose a complementary perspective that extends current understandings of cultural transition in sport beyond mere investigation of its psychosocial content or the whys. Finally, the duality of perspectives presented in the stories elucidates the complex and often conflicting agendas, motivations and goals of transnational players and host environment members. The findings carry applied utility that can benefit stakeholders and practitioners working with culturally diverse teams in the deployment of culturally informed club management strategy, educational tools, and interventions.

The transnational migration of mindfulness: a call for reflective pause in sport and exercise psychology

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ABSTRACT

The internationalization and globalization of the transnational sporting space in the past few decades has witnessed an explosion of research and attention rendered to different forms of transnational movements including migratory movement of athletes, coaches, and consultants. Although the sociological and psychological research on transnational migration has flourished in recent years, the transnational movement of ideas, practices, and cultural norms, especially within the sport and exercise psychology community, has received scant attention. In this paper, we comment on the evolving field of transnational sporting space and how indigenous ideas are routinely contested, transformed, and adopted to fill strategic and hegemonistic motives. To illustrate this, we examine the transnational migration and cultural adaptation of mindfulness practice in the mainstream sport and exercise psychology research and applied community where it has been hailed as the gold standard for performance excellence, which has consequently been transformed into a global booming industry, whilst simultaneously expropriating it from its Eastern roots to make it more palatable and secular for Western audiences. Sport-based mindfulness interventions, journal articles in *Psychology of Sport and Exercise* in 2008-2020, and sessions of the FEPSAC 2019 Congress were examined to reflect on the current positionality of mindfulness within sport and exercise psychology research and practice. We found the reviewed research approached mindfulness as a means to enhance athletes' performance, well-being, or both. Spiritual and Eastern philosophical roots of mindfulness were notably absent from the majority of

KEYWORDS

Mindfulness; sport and exercise psychology; cultural appropriation; transculturation; ethnocentrism

publications and sessions. In its journey from East to West, mindfulness has been reappropriated through the mechanisms of mediating, mystifying, medicalizing, mainstreaming, marketing, and moralizing. It has further been noted that the Western cultural perspective has dominated the cultural encounter and discourse when mindfulness migrated from East to West. We intend for this paper to offer relevant reflections, appropriate recommendations, and a word of caution to scholars and practitioners employing mindfulness in research and practice. Researchers and practitioners are called to reflect on their own positionality and how Eurocentric assumptions permeate contemporary mindfulness practice. We call for greater attention to the philosophical, ethical, and spiritual dimensions of mindfulness and for culturally competent and sensitive practice.

Gender diversity in dual career: resilience and vulnerabilities

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ABSTRACT

Dual career discourse has recently received traction across geographical space of the elite sport culture. In spite of the growing research, however, we know fairly little about the gendering processes that shape individual experiences and development pathways of athletes embedded in various dual career environments. Furthermore, the binary organization of current sporting structures, such as athletic competition for girls/women and boys/men, has effectively marginalized (if not excluded) transgender and non-binary student-athletes from the dual career discourse. The purpose of this symposium is twofold: to present empirical evidence for gendered patterns of student-athletes' development and to discuss how cultural assumptions about gender serve as a frame to reinscribe inequalities in the dual career context. The symposium is built around the Finnish Longitudinal Dual Career project (Ryba et al., 2016) in which psychosocial development and academic/vocational orientation of talented youth athletes has been investigated alongside their athletic career development during four years in elite sport high schools. Approximately 400 student-athletes and their parents took part in the longitudinal mixed methods study. After the symposium's organizers provide an introduction to the symposium's theme and objectives, the first presenter will share findings of a longitudinal qualitative study in which we theorise how cultural beliefs about gender create systematic patterns of difference between male and female athletes' dual careers. The second presenter will discuss the distinct career adaptability profiles that were identified among student-athletes by means of latent profile analysis and the role of individual and parental success expectations in shaping their development. The third presenter will aim to provide empirical evidence whether gender differences in student-athletes' motivational orientations are due to the different role a coach plays depending on the student-

KEYWORDS

Student-athletes; dual career development environment; social justice; inclusivity; cultural praxis

athletes' gender; and whether coaching styles are also gendered. The fourth presenter will draw on previous studies that examined experiences of transgender student-athletes to problematize extant socio-cultural constraints in the elite sport context. The ensuing discussion will be facilitated by two discussants situated in the gender studies and athlete career fields, respectively. The first discussant will relate the key findings of the three presentations to current debates about gender diversity and inclusion in sport, while the second discussant will situate the key findings in a broader topic of athlete careers. Finally, the discussants will draw on previous research with transgender and cisgender student-athletes to facilitate critical envisioning of the future directions in dual career research, policy, and practice.

Implications of the identity position for dual career construction: gendering the pathways to (Dis)continuation

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ABSTRACT

Recent research has identified the gendered patterns in a dual career (e.g., Ekengren et al., 2018; Tekavc et al., 2015) pointing to underlying gender structures that influence athletes' experiences and decisions about their future. Despite this, we know fairly little about how the gendering processes shape student-athletes' life stories and relate to their dual career (dis)continuation. In the current longitudinal qualitative study, we investigated how cultural beliefs about gender create systematic patterns of differences between male and female athletes' dual careers. The specific aims were to examine (1) how gender was used as the frame to organize the narrative construction of dual career styles and (2) how these styles shaped behavior and decision-making to (dis)continue a dual career pathway. Data were collected in life story interviews with 18 talented Finnish athletes (10 cis women, 8 cis men) at four points in time – when they averaged 16, 17, 19, and 20 years of age – followed by an integrative narrative-discursive analysis. Our analysis revealed that (a) contrapuntal style was gender-typically female; (b) monophonic style was gender-typically male; and (c) dissonant style was an important pathway to dual career discontinuation through which gender ideologies impacted the emergent adults with differential outcomes. The findings show that participants' stories were largely organized along gendered contours of the life course that promoted differently the proper ways to be a successful athlete for young men and women. While the dominant performance narrative (Douglas & Carless, 2009) supported male participants' identity construction, the current study has identified 'superwoman' to be a better interpretive frame for understanding female participants' self-stories. The gendered nature of the master narratives may explain why the monophonic style was gender-typically male and the contrapuntal style was gender-

KEYWORDS

Student-athletes; gender identity; life story; narrative

typically female. Furthermore, studying the outcomes associated with each dual career construction style provided insights into the ways in which cultural beliefs about gender produce differential and shared effects on athletes' dual career experiences. In conclusion, our findings signpost that dual career discourse practices are organized along gender binary, which may be fortifying the assumed normalcy of gendered life choices instead of opening up the field of possibilities. To facilitate cultural change in dual career development environments, we urge for the critical examination of socio-cultural constraints on adolescent athletes' choices.

The role of individual and parental expectations in student-athletes' career adaptability profiles

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ABSTRACT

Since only a few athletes make sport as their main profession, adolescents need to combine sport and education (i.e., Dual Career) to prepare for their future. Career adaptability, which refers to psychological resources required to overcome challenges presented by vocational tasks, may help to assess how individuals plan and develop their career. Literature indicates that individuals with higher adaptability show, for example, an increased sense of control and life satisfaction. In addition to individual competencies, environmental influences are crucial in the DC development of youth. Past research demonstrates that parental expectations can contribute to the successful DC by expressing confidence in their child's abilities to succeed in sport and school. The present study aimed to examine what kind of distinct adaptability profiles in terms of concern, dual career concern, control, curiosity, and confidence can be identified among student-athletes. Moreover, we investigated whether student-athletes' expectations of success in sport and school and corresponding parental expectations, were predictors of the likelihood for athletes to show a certain profile. We also examined how gender is represented in the different profiles. The participants were 391 student-athletes (51 % females) from six different sport high schools in Finland, and 448 parents (42 % fathers). We used the Career Adapt-Abilities Scale – Dual Career Form (Ryba & Aunola, 2015) to assess the five dimensions of adaptability. The student-athletes' success expectations were assessed with the Success Expectations Scale (Nurmi et al., 1995) via online survey at the beginning and the end of the first year of high school. At the beginning of the high school, parents were asked to answer a questionnaire on their success expectations for their child in both school and sport. Structural equation modeling and latent profile analysis were used to analyze the data. Five adaptability profiles were identified: maladaptive adaptability, low adaptability, moderate adaptability, high adaptability, and

KEYWORDS

Dual career; career adaptabilities; success expectations; high school

improved adaptability. Student-athletes' high success expectations in school and sport were associated with higher adaptability profiles. Mothers' high success expectations in school increased the probability of student-athletes to show higher adaptability profiles. Finally, girls had a higher probability to demonstrate lower adaptability profiles, while boys demonstrated higher adaptability profiles. Overall, not only student-athletes' high school-related expectations but also high sports expectations are related to the career adaptability. Moreover, mothers' high expectations concerning the student-athletes' school success are an important factor for supporting student-athletes' dual careers. Finally, gender differences should be taken into consideration when supporting student-athletes.

The role of gender and coaching styles in adolescent student-athletes' motivational orientations in sport and school

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ABSTRACT

In order to successfully carry out a dual career (i.e., combining an elite sporting career with education or work), motivation is needed not only for sport but also for school. Coaches are important motivational agents for adolescent student-athletes. Thus far, however, majority of the research has focused on the role of the coach in student-athletes' sport motivation. To support student-athletes' engagement in dual career and educational goals, it is important to examine what role coaches play in student-athletes' school motivation. Moreover, because gender differences have been reported in motivational orientations an important question is to what extent these differences are due to the different role a coach plays depending on student-athletes' gender and also whether coaching styles are gendered. The study examines gender differences in student-athletes' motivational orientations (i.e., mastery versus performance) in sport and school across upper secondary school, and the role of coaching styles (affection/warmth and psychological control) in these orientations. The gender differences in coaching styles—in terms of student-athletes' gender, coaches' gender, and their interaction—were also examined. The sample of the study consisted of 248 (51% female, 49% male) student-athletes from six upper secondary sport schools across Finland. The student-athletes' motivational orientations were assessed using the Perceptions of Success Questionnaire (POSQ; Roberts et al., 1998) measuring their achievement goals in both sport and school at the beginning of the first year and at the end of the third year of upper secondary sport school. The student-athletes' perceptions of coaching styles were assessed with the Finnish version (Aunola & Nurmi, 2005) of

KEYWORDS

Coaching; affection; motivational orientation; dual career; gender

Block's Child Rearing Practices Report (CRPR; Roberts et al., 1984) at the end of the third year. The results show that female student-athletes demonstrated higher levels of mastery orientation than males in both sport and school domains. Second, affective coaching style predicted male student-athletes' mastery orientation in sport as well as both male and female student-athletes' mastery orientation in school. Finally, female coaches were reported using more of an affective coaching style than male coaches. The results support the gender diversity assumption in student-athletes' dual career motivation and the important role coaching styles play in student-athletes' motivation for sport and school. The results of the present study can be used to educate coaches on the benefits of affective coaching style in terms of student-athletes' mastery orientation in the domains of sport and school.

Supporting gender diversity and transgender inclusion in dual career

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ABSTRACT

In recent years, the rhetoric of gender diversity and inclusion in sport is gaining traction in Europe and worldwide. Various policy documents construct gender equality as a fundamental value, highlighting the importance of non-discrimination and equal access to sport for all people regardless of gender identity. Yet, the binary organization of elite sport (and consequently, the dual career practices and structures) continue to pose challenges for the inclusion of transgender and non-binary student-athletes, who have been found to face barriers in sport, including prejudice, discrimination, harassment, a lack of safe and inclusive environments, a lack of protective policies, and a lack of understanding from others (Caudwell, 2014; Gray et al., 2018; Jones et al., 2017; Semerjian, 2019). Thus, despite calls for safe and inclusive dual career environments, we still lack knowledge on how gender diversity and transgender inclusion can actually be achieved. The needs of transgender athletes have received some scholarly attention in recent years (e.g., Cohen & Semerjian, 2008; Greey & Barker-Ruchti, 2019; Klein et al., 2019), but this issue has not yet been addressed in the context of dual career. The works presented in this symposium reveal that binary gendered pathways are persistently promoted for athletes in dual career environments, limiting this way their choices and options for life and career decisions. Such rigid gender understandings and expectations, not only present a barrier to developing gender-diverse and trans-inclusive dual career environments, but constrain the learning and sporting experiences of all student-athletes. As critical, feminist and queer scholars of sport psychology have argued (e.g., Gill & Ryba, 2014; Krane & Waldron, 2020; Ryba et al., 2013), optimal experiences, development and

KEYWORDS

Cultural praxis; gender minority; non-binary; student-athletes

performance can only result in environments that embrace diversity and inclusivity and take into account the unique characteristics, ways of expression and socio-cultural circumstances of each athlete. To further the calls of the aforementioned scholars for working towards more equitable, socially just and gender diverse sporting contexts, we discuss the potential of cultural praxis (Chroni & Kavoura, 2020; Ryba & Wright, 2005, 2010) as a framework that could guide us towards such cultural change in future dual career research, policy and practice.

Cognitive-dynamical approaches: merging science and applications

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Interdisciplinary Center

ABSTRACT

The symposium consists of five presentations, which together constitute a conceptual framework designated to integrate the linkage among emotions, cognitions, and performance. The first concept introduces the ecological-dynamical approach showing how team coordination is reflected through game-based interaction network. The second concept compliment the first one by presenting technological innovations used to enhance sport-related perceptual-cognitive skills in the field and in the laboratory. In the third presentation a newly developed approach designed to evaluate performance quality which better accounts for psychologically related variables not accounted for by absolute performance indicators. In the fourth presentation, the effect of emotional contagion on team members' collective efficacy, team cohesion, perceived effort, emotions, and perceived and objective performance is shown experimentally. In the last presentation the VAR technology in soccer referring is used to test the concept and its applications to training referees in decision-making and error reduction. Together, the presentations introduce conceptual and applied innovations which drive the sport psychology domain forward. In each presentation theoretical and applied perspectives are elaborated on.

KEYWORDS

Cognition; Dynamical System; Performance; shared emotion; Emotional contagion

Interpersonal emotions in team sports: effects of emotional contagion on emotional, social and performance outcomes of a team

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ABSTRACT

Purpose: The study tested the extent to which emotional contagion in a team influences feelings, team cohesion, perceived collective efficacy, perception of effort, perceived performance, and performance of the team members. **Method:** Forty-seven amateur participants practicing non-competitively in CrossFit were divided into two intervention conditions: high pleasantness-high arousal (HH) and low pleasantness-low arousal (LL). Two trained confederates were recruited to create these mood states, which served as a trigger for the team's "emotional contagion." **Results:** The findings indicated that the participants in the HH condition performed the task better than participants in the LL condition, shared higher collective efficacy and team cohesion, reported more a positive emotional profile, and perceived the team performance better. **Conclusions:** Emotions play a major role in affecting social-cognitive functions, and practical implications of emotions contagion are discussed.

KEYWORDS

Emotional contagion; shared emotion; perceived performance; perceived effort; collective efficacy; team cohesion; emotions

Innovations in ecological dynamics approach: analyzing team coordination properties via game-based interaction networks

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ABSTRACT

Introduction: The inquiry of sports performance through an ecological dynamics approach pertains to how repeated interactions among athletes result in the emergence of self-organizing patterns of behavior (Araújo et al., 2020). Driven by concepts from the ecological dynamics approach, the Social Network Analysis (SNA) has become a prominent tool to illustrate and quantify collective patterns of organisms in their naturalistic environments (Warner et al., 2012). Specifically, the Game-Based Interaction Networks (GBIN) method is used to quantify the passing synergistic properties of team ball sports during live matches (Grund, 2012). **Purpose:** The current study was aimed to uncover synthesizing team coordination mechanisms of elite soccer teams. Deploying a standardized taxonomy of sport expertise (Swann et al., 2015), we investigated how world-class elite teams and competitive elite-teams in the La-Liga Spanish league, English Premier League, and German Bundesliga differ on coordination and performance indices. **Methods:** Match analysis reports were drawn from the Wyscout platform (Wyscout Spa, Italy), and the exploratory network analysis of 36 soccer matches was conducted via an open-source software (Gephi). The study is deliberately focused on matches between teams who reached the top two standings in their league at the end of 2018/2019 (i.e., world-class elite teams) against the three teams which relegated to second-tier league at the end of the season (i.e., competitive-elite teams). The study sampled both home and

KEYWORDS

Game-Based Interaction Networks (GBIN); Ecological Dynamics Approach; Team Coordination; Soccer

away games for controlling the contextual factor of the game location. Results: One-way MANOVAs revealed that world-class elite teams were more likely to maintain higher density ratings, lower centrality ratings, and superior performance outcomes when playing against competitive-elite teams. Visual network configurations support the observations of these results. Conclusion: Given the shortage of research examining coordination during live competitions, these findings may reveal the ways in which teams form their passing strategies in naturalistic performance contexts. Overall, the findings and illustrations in the current study can guide further applied and theoretical explorations for endorsing the GBIN method as an operational definition of team coordination in the sport.

Improving performance with perceptual-cognitive technology

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ABSTRACT

Introduction: The sport technology industry has grown immensely in the past two decades. The focus has been mostly on the physiological, technical, analytical, fan and media areas. **Purpose:** Recently the cognitive training domain has also joined the “technological wave” (Filho & Tenenbaum, 2018; Schack, et al., 2014). Technological innovations aimed at improving performance via development of effective perceptual-cognitive skills (PCS) have been established. Thus, the “last frontier” of the sport technology domain is now gaining traction and interest by sport organizations and clubs. Perceptual-cognitive skills such as visual attention (selective, width), anticipation, working memory, mental representations, decision-making were found to be crucial to motor performance. Moreover, substantial research findings indicate that perceptual-cognitive skills change under pressure and can be learned and modified. Specifically, under high pressure, attention narrows and the information flow becomes partial and is accompanied with interfering thoughts. This process limits the capability of anticipatory decision and subsequently action execution. The novice-expert paradigm research method was applied in many studies and has indicated that pressure affects differently the perceptual-cognitive skills under pressure. Specifically, experts can choke under pressure by losing automaticity and flow. **Methods:** The technologies can be categorized by two dimensions (Hadlow et al., 2018), (1) domain – from general (e.g., tracking objects) to task specific (e.g., identifying patterns in basketball), and (2) functionality – from lower (e.g., depth perception) to higher order (e.g., prioritizing options). Furthermore, use of evidence-based methods for

KEYWORDS

perceptual-cognitive skills; technology; decision-making; training; measurement

measuring and training PCS, such as the occlusion paradigm and innovative technologies from other domains, such as virtual reality, have been implemented within these technologies (Fadde, & Zaichkowsky, 2019). Results and Conclusions: The presentation provides a theoretical overview of the importance of measuring and training PCS and processes. Then, a review of current technologies used to assess and develop PCS is provided. Strengths and limitations are highlighted and a vision to the future is offered.

Soccer refereeing in the VAR Era: conceptual considerations and training implications

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ABSTRACT

Introduction. Decision-making (DM) is considered a fundamental aspect of soccer refereeing (Aragão e Pina et al., 2018; Samuel et al., 2020). Moreover, referees perceive DM skills as the most imperative characteristic of their performance (Schnyder & Hossner, 2016; Slack et al., 2013). At the elite level, referees interact, process, and make numerous decisions under considerable pressure (Dawson, 2012; Samuel, 2015; Schnyder & Hossner, 2016). Referees must continuously locate themselves in a position, which enables quick and correct capture of multiple static and dynamical cues (e.g., ball, players, lines) in a sometimes-unexpected arrangement; all for generating reliable and trustful decisions (Lex et al., 2014). It has been suggested that referees make decisions which must protect the safety of the players, must be perceived as fair and accurate, and must promote the flow of the match, with the ultimate goal of maintaining match control and preserve the integrity of the match (Russell et al., 2019). This indicates that contextual factors concerning the match score, match playing time, and previous decisions made are pertinent for effective decision-making, as suggested by game-management advocators (e.g., Mascarenhas et al., 2002; Samuel, 2015; Unkelbach & Memmert, 2008). Purpose. We discuss the various factors potentially affecting DM in soccer referees, paying a special attention to the influence of the video assistant referee (VAR). Then, a model of sequential DM in soccer refereeing is presented to account for the complexity of the DM process (Samuel, 2020). This model consists of Tenenbaum's (2003) sequential DM model and on the soccer refereeing research literature. It accounts for five types of decisions (e.g., where to gaze, what to anticipate) and the associated operational mechanisms (e.g., detecting essential stimuli in the visual field, upload optional decisions to long-term working memory) and influencing factors (e.g., location on the field, contextual information, stress) involved in the sequential DM process throughout a match. In addition, DM training of soccer referees is typically conducted using a stationary video clips format

KEYWORDS

Officiating; VAR; decision-making; football; training

(Schweizer et al., 2011) or an on-field simulation. Both types of training present shortcomings for training sequential decision-making in a form which simulates real refereeing performance. Conclusions. The final aim of this presentation is to discuss practical implications for effectively training DM in soccer referees, based on the sequential model, and including the issue of technological aids.

Does the league table lie? the importance of perceived performance measure in sport psychology

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ABSTRACT

Introduction. Performance evaluation in sport is usually made by using objective outcome measures such as win-loss percentage, points gained, and ranking despite their inherent limitations (e.g., unaccounted baseline differences). The common notion that "the league table doesn't lie," may be true in absolute terms; yet, it is fairly oversimplistic and may be misrepresentative for performance evaluation. In "relative to expectations" terms, perceived performance measure provides a reliable and valuable performance related information. **Purpose.** This study aimed at developing the Perceived Performance in Team Sports Questionnaire (PPTSQ) to capture the team members' perception of their team performance at any stage of the season. **Methods.** Four samples of professional and collegiate athletes were used to test the psychometric properties of the PPTSQ. Exploratory and confirmatory factor analyses were used to estimate construct and content validities. **Results.** These procedures revealed a 2-dimensional model of effort investment and perceived outcome. The reliability analyses for the PPTSQ provided satisfactory evidences for both dimensions (i.e., internal consistency $.75 < \omega < .89$; high temporal stability). Concurrent validity was supported a moderate correlations between PPTSQ and the Group Environment Questionnaire, and the Team Assessment Diagnostic Instrument. Correlational analysis between the PPTSQ and an objective measure of performance supported its predictive validity. **Conclusion.** The PPTSQ overcomes various objective measures shortcomings (e.g., considering base-rate biases) resulting in a meaningful team performance metric. The presentations centers on (a) the contribution of the newly approach to team performance measure, (b) the validation process and results, (c) the PPTSQ potential contribution to sport psychology research, and (d) the PPTSQ specific role in an intervention program aimed at developing shared-mental-models and meta cognition. The concept and its implications are demonstrated and discussed theoretically and practically.

KEYWORDS

perceived performance;
objective outcome; team
performance; base-rate bias

Advancing the practice of REBT in sport & exercise psychology

Saqib Deen

MD Performance Psychology

ABSTRACT

This symposium is based on the Advancement of Rational Emotive Behaviour Therapy practice. Over the last 10 years, REBT has gained fast momentum in the field of sport, performance & exercise psychology. Whilst the number of international peer-reviewed REBT journal papers have been growing, a landmark textbook titled REBT in Sport Exercise by Turner & Bennett (2018) presented diverse case studies from all around the world on the practice of this original form of CBT. This text highlighted the international application of this coaching model, considering cultural & contextual factors in the application of REBT as well. The current symposium will add significant insight to the audience at the ISSP2021, and will be presented by a panel who are all advanced level practitioners REBT and who prioritise REBT as a research-focus. Dr Andrew Wood, who completed his PhD investigating the effects of REBT on performance, will present on the emerging topic of the integration of Motivational Interviewing with REBT/CBT. Dr Wood will explore the common missing focal point of a majority of intervention studies, which exclude the "how" and technical skills involved in conducting applied psychology from a relational standpoint. Dr Wood will display how MI enhances the efficacy of REBT/CBT by presenting a case-study. Secondly, Nanaki Chadha, who is a PhD student in REBT will explore the scientific mechanisms of REBT and it's contrast with Lazarus's Cognitive Appraisal Theory. She will share the findings from an intricate single-case study which explored irrational beliefs, cognitive appraisals, and affective mood states in elite golfers. The results including pre-and post intervention data will display how REBT was impactful in reducing irrational beliefs, and resulted in changes in cognitive appraisals, affective mood states, and increased performance in golfers. Thirdly, Saqib Deen who is PhD student studying the development of psychological resilience in performers using REBT, will present REBT's cross-cultural application, and how after some successful experiences with the traditional model, was followed by some non- successes which led him to exploring other facets of CBT. This includes Beckian Cognitive Therapy, MBCT, MBSR, and ACT. Mr Deen will then go on to present how CBT's can be integrated, will reflect on lessons learnt, and the future directions for this area of study in sport psychology. Lastly, Dr Martin Turner, who recently won the Albert Ellis Institute Award for his research in REBT and is the true pioneer in this field, will present the ever-advancing levels of psychometrics he has developed for REBT in the last 10 years. These include a sport specific irrational beliefs measure (the iPBI), an online profiling tool for irrational beliefs, a smartphone app which examines the ABC's of REBT, and a brand-new assessment of the ABC model for it's comprehension in performers; the cognitive-mediation beliefs questionnaire (the CMBQ). He will share the latest data regarding the quick-evolution of psychometrics in REBT, and highlight the future directions for

KEYWORDS

REBT; CBT; applied sport psychology; cultural sport psychology; contextual sport psychology

this fascinating area of study. The symposium will then conclude with a brief summary.

Communication for change: integrating motivational interviewing with REBT/ cognitive behavioural therapy in sport'

Saqib Deen

MD Performance Psychology

ABSTRACT

The evidence based for Cognitive Behavioural Therapies (CBT's) is very strong (Hofmann et al., 2012). Nevertheless, almost a quarter of clients who receive CBT for anxiety will drop out, whilst, and anywhere between 5-50% of clients will not respond to treatment (Marker & Norton, 2018). Whilst there are widespread recognition and recommendations of the importance of working alliance within CBT, the guidance on how to explicitly assess client readiness and cultivate this beyond broad descriptions is relatively scant. Practitioners use cognitive behavioural approaches as empirically derived frameworks and/or mechanisms to generate positive change; nevertheless, much of this is focused on the 'what' (action-orientated content), with less understanding given to the 'how' - that is, the relational and technical skills that develop the working alliance and enhance intervention delivery. The domain of elite sport is a fast paced, dynamic, and often time limiting for sport psychologists to operate. Furthermore, the prospect of engaging and maintaining with psychological provision for some can be an intimidating/daunting prospect for many reasons. Hence, it appears critical that sport psychologists are able to skilfully and flexibly build strong relationships and work with ambivalence to foster positive psychological outcomes. One approach to achieve this goal and one that is gaining traction in sport is that of Motivational Interviewing (MI). Indeed, much is assumed about client's readiness and willingness to engage in sport psychology provision, which can often lead to ineffective practice. MI is a person-centred and goal-orientated style of communication, which seeks to foster a strong working alliance between practitioner and athlete, and to enhance readiness for intervention. In this presentation we first describe the origins and components of MI, and its current status within the sport psychology literature. Second, we present a hypothetical case-example to chart the comprehensive and synergistic integration of motivational interviewing with a range of CBT's that covers, but is not limited to: the analysis, formulation, delivery, and maintenance processes inherent within CBT. Ultimately, though elements of MI are implicit within many psychological interventions, we make clear the distinct, identifiable, teachable, and measurable active ingredients by which sport psychologists are able to initiate, build and maintain relationships with their

KEYWORDS

REBT; CBT; motivational interviewing; therapeutic alliance; sport

clients, and generate readiness for behavioural change; a powerful approach when used in adjunct to CBT.

An idiographic single-case study examining the effects of Rational Emotive Behaviour Therapy (REBT) on golfing performance

Nanaki Chadha

Staffordshire University

ABSTRACT

Most sport cultures promote the notion of "win at all cost" and sets the foundations from which irrational philosophies can develop amongst athletes. Also, when sport is viewed through the lens of media, irrational beliefs are evident in the language used in the daily reporting of sport. Thus, the manner in which sport is propagated in the media makes us believe that the very essence of sport is irrational. This kind of imprecise and irrational thinking is dangerous as it precipitates dysfunctional emotions and maladaptive behaviours among athletes and in turn influences their sporting performance. Further, there is a growing body of research that places irrational beliefs within cognitive appraisal theory (CAT, see Lazarus). Irrational beliefs are considered to play an important role in cognitive appraisal and it is believed that appraisals have a direct impact on emotions. In this presentation, the speaker discusses the effects of Rational Emotive Behavioural Therapy (REBT) on irrational beliefs, cognitive appraisals, affective states and actual competitive performance, among athletes (specifically Indian golfers). An idiographic single-case experimental design was adopted, which allowed for an idiosyncratic observation and data collection of each participant across pre- intervention, intervention, and post-intervention phases. Throughout the three phases, the athletes were invited to complete questionnaires regarding their thoughts and affective states in the lead up to their actual upcoming golf competitions. The collection of multiple probes provided flexibility in the data collection process and offered an opportunity to collect various qualitative and quantitative (e.g., self-report measures) data, triangulating a range of information within a single case study. The speaker presents an account on how the REBT intervention was implemented amongst the athletes on the golf course, in between shots in a real-life manner. Further, how the electronic forms of therapy was a convenient medium to provide support to athletes who were constantly travelling for their golf competitions. To conclude, REBT deemed effective in reducing irrational beliefs among golfers. Further, reduction in irrational beliefs resulted in changes in cognitive appraisals, affective states, and golf performance among golfers. Findings are discussed with applied recommendations, and potential directions for the future in this specific line of research are presented to conclude.

KEYWORDS

REBT; CBT; golf; irrational beliefs; affective sta

The evolution of assessment in REBT in performance settings

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Manchester Metropolitan University

ABSTRACT

In a recent systematic review of rational emotive behaviour therapy (REBT) applied with athletes, the authors indicate that the use of REBT in sport has grown significantly over the last 10 years. It also indicates that REBT is an effective approach to sport psychology practice, especially for performance anxiety. As a function of this growth, the practice of REBT has advanced, but also, the ways in which we monitor change within REBT has developed. Fundamental to REBT is the notion of irrational beliefs, which underlie emotional and behavioural issues, as evidence in research studies in athletes. Therefore, accurately measuring irrational beliefs is important for athlete assessment prior to, during, and post-REBT, and as part of identifying relevant risk factors for mental ill-health. In addition, as part of REBT, athletes learn that it is not events (A) alone that underpin emotion reactivity (C), but the beliefs (B) they have concerning events (A) that underpin emotion reactivity (C). This ABC framework is fundamental to REBT theory and practice, but until now, researchers and practitioners have not been able to measure athlete understanding of this ABC viewpoint. Therefore, in this talk, the speaker introduces a range of measurement tools that have emerged recently in the sport and psychotherapy literature. This includes a sport-specific measure of irrational beliefs (the irrational performance beliefs inventory; iPBI), an online profiling tool offering a more expansive assessment of irrational beliefs (the smarter thinking profile), a Smartphone App that assesses actual As, Bs, and Cs (Smarter Thinking App) and encourages cognitive change, and a new assessment of ABC understanding (the cognitive-mediation beliefs questionnaire; CMBQ). Data from research studies are shared and discussed, alongside applied recommendations. The speaker shares details concerning measurement development and utilisation. In particular, much time is spent in the talk on the data that have not yet been published, revealing new understanding about how REBT constructs can be assessed and applied in sport. Also touched upon briefly is a new measure for irrational beliefs concerning body image. Overall, the importance of accurate and contemporary measurement is stressed, and the path forward in REBT assessed is proposed and discussed.

KEYWORDS

REBT; psychometric assessment; iPBI; CMBQ; technolog

The impact of ISSP and IJSP in the development of sport psychology in the world

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ABSTRACT

This symposium aims to analyze the impact that the founding of the International Society of Sport Psychology and the International Journal of Sport Psychology has had on the development of sport psychology worldwide. The study of the relationship between mind, body, and sport performance is at the core of the development of sport psychology and it is a history strongly connected with the affirmation of the Olympic Games. If the ancient Olympics were an example of the implementation of this approach in sport, moving many centuries forward, in the twentieth century we find that even Pierre de Coubertin, the founder of the modern Olympics, was also concerned with the integration of body, character and mind. In fact, it is in the early years of the twentieth century that it is possible to trace the first scientific programs and psychological counseling in the field of sport, thanks to the pioneering work of Coleman Griffith in the United States and Avksentii Puni in the Soviet Union, but it takes until the 1970s for sport psychology to be recognized as a scientific and professional field of knowledge. This could happen thanks to the emergence of a scientific movement that emerged in those years. An initial community of experts who (1) got to know each other and communicate after the foundation of the ISSP and (2) disseminated scientific data through the IJSP. These results were obtained thanks to the dream of Ferruccio Antonelli and a few other pioneers who founded the ISSP and IJSP at the end of the 60s, and who spread this approach in North America with the organization of the 2nd World Congress (1968) and the foundation of NASPSPA (1967). Sport psychology grew in South America with the initial efforts of, among others, Athayde Ribeiro da Silva. The following presentations of this symposium will discuss the development of sport psychology that was demonstrated across the globe in the subsequent years.

KEYWORDS

History; ISSP; IJSP; Ferruccio Antonelli; Sport Psychology

Rome-1965, the 1st ISSP congress as a milestone in the development of modern sport

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CIDEFES - Lusofona University, Lisbon, Portugal

ABSTRACT

Sport psychology (SP) was initially discussed in the 50's at the All-USSR Meetings on Psychology of Physical Culture and Sport. In addition, the Tokyo Pre-Olympic Congress (1964) included for the first time a session on SP. Moreover, psychiatrists affiliated to the International Federation of Sports Medicine (FIMS) became interested in the psychology of competitive sport. Within FIMS, the Latin Group of Sports and Physical Medicine organized a special symposium on psychological aspects of sport in Barcelona (1963), during its 4th Congress. The success led to the organization of the first World Congress of SP in Rome, in 1965,

KEYWORDS

Sport Psychology; History; First SP Congress

under Antonelli's leadership. Antonelli apparently was influenced by the tradition of FIMS in organizing specific sports medicine international congresses. Sport psychology was already mature enough to have a major international congress. The purpose of this presentation is to discuss the influence of the 1st modern World Congress of SP in clarifying concepts, applied approaches and fields of intervention, and promoting further developments. Information was collected from published and unpublished documents, including the Proceedings of the Congress of Rome, and oral reports. We found that the congress announcement was mainly directed to the medical sport federations all-over-the-World. Participants were about 450 from 36 countries, including the most prestigious researchers in this field. The 216 scientific contributions by 237 authors from 27 countries included 70 reports, 51 short Communications and 95 free papers. Europe had the larger number of participants, including the eight Socialist Eastern European countries that registered 46 participants. The influence of the medical and clinical approach is detected in the topics, and the terms used in the reports (Lucidi, 2015) that included general theories of psychology. There was a search for a basic theoretical and methodological mutual understanding, and we may conclude that the Eastern European countries were at a more advanced stage of knowledge having clearer ideas, concepts and practices about the specific status, methods and tools focused on top level sport. On the other hand, scientists in the Western countries still seemed searching for a purpose and a specific paradigm to give sport psychology meaning in the interception of sport/physical education and general psychology. The Congress of Rome opened the theoretical horizons of SP and application to sport contexts and stimulated further development.

The impact of ISSP and IJSP in the development of sport psychology in the world: the impact on North America

Glyn C. Roberts

Professor Emeritus: University of Illinois, Professor Emeritus: Norwegian University of Sport Science

ABSTRACT

The purpose of this presentation is to document the influence ISSP on the development of sport psychology in North America. ISSP had both a direct and an indirect influence on sport psychology in North America. During the early 60s in Europe, a small group of scientists met to informally to discuss issues pertinent to the emerging field of sport psychology. One outcome of this group was the forming of ISSP and the organization of the First International Congress of Sport Psychology held in Rome, Italy, in April of 1965. This was the first ever major scientific congress devoted to sport psychology. The congress attracted Warren Johnson and Arthur Slater- Hammel from the US, and they also attended a managing council meeting of ISSP in Barcelona, in 1966. At that meeting pressure was put on the US contingent to host the next congress in the US. Johnson and Slater- Hammel

KEYWORDS

ISSP; NASPSPA; Sport Psychology Development

invited ISSP to hold the next Congress in Washington, DC in 1968 hosted by the then non-existent North American Society of Sport Psychology and Physical Activity (NASPSPA)! It was a name they coined on the spot, in Barcelona. They corresponded with an appointed steering committee in the US and arbitrarily declared NASPSPA to be in existence! Thus, NASPSPA was conceived! The steering committee met in Chicago in March of 1966 and decided to hold a meeting of NASPSPA at the next American Association of Health, Physical Education and Recreation (AAHPER) in Las Vegas, Nevada. Thus, the first official meeting of NASPSPA was not held until March 8th, 1967. The indirect influence was a little more subtle in that it affected how NASPSPA developed its mandate. It followed the lead of ISSP and had keynote speakers that covered both psychological science and application. And NASPSPA also documented the presentations of NASPSPA in a Newsletter, But in 1973, NASPSPA decided to follow ISSP and publish a monograph documenting the papers as they were presented at the annual meeting. The 1973 meeting was also the first meeting where NASPSPA established the tradition of having 3 keynote talks, one each in motor learning, motor development, and social psychology of sport that lasts to this day. That monograph edited by Mike Wade and Rainer Martens became the first book published by Human Kinetics. Thus, ISSP was a model for NASPSPA and ISSP had a powerful and long-lasting impact on initiating sport psychology in North America.

The impact of the ISSP on sport psychology in central & South America

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ABSTRACT

For over a century, the field of Sport Psychology (SP) has been developing throughout the world, however, its history is still spread across different countries, languages and types of publications. To investigate the development and historical course of the SP field in Central and South America, and its association with the ISSP's activities. A literature review was conducted on online databases (i.e., Web of Science, ScienceDirect, LILACS, Scielo) and through other manual searches in order to gather information from papers, books, dissertations and other documents. Four major periods were identified. The 1st period (1930-1960) comprised individual initiatives from Psychology and Physical Education professionals in Brazil, Argentina and Guatemala, seeking to improve sports performance, mainly in football. The 2nd period (1960-1980) was

KEYWORDS

Sport Psychology; History; Central America; South America

characterized by advancements in the applied and scientific fields, adding to the local efforts at each country. ISSP's foundation in Europe, in 1965, influenced the dissemination of scientific knowledge and specialized professionals in Latin America. Athayde Ribeiro da Silva, from Brazil, was the first Latin American representative in the ISSP's managing council (1965-1977), being an active member during the ISSP's Congresses of 1965, 1969 and 1973. Such experience at the international stage influenced Athayde's major role on the development of SP in Brazil and the rest of the continent. The 3rd period (1980-2000) marks the field's consolidation across Central and South America, with the foundation of many SP Societies/Associations, including the South-American Society of Sport Psychology (SOSUPE) in 1986. This period also saw a rise, in Latin America, in the number of SP scientific or professional events, scientific journals and research, educational opportunities in universities and expansion of the applied field to a variety of sports. The 4th period (2000-present) is characterized by the field's recognition, with increased international collaboration, expansion of presence of SP in undergraduate and graduate courses, better acceptance and greater inclusion of SP professionals in sports. Following the trend from the 1989 ISSP World Congress, topics related to exercise, health and well-being also became more prevalent, whereas elite performance had been predominant up until the 3rd period. The rich history of SP in Central and South America combines the local efforts to improve performance in sports with the knowledge coming from North America, Western Europe and the Soviet Union. Moreover, the ISSP has played a significant role for the development and strengthening of SP in Latin America.

The Vision of Antonelli and the Role of the International Journal of Sport Psychology

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ABSTRACT

Ferruccio Antonelli had the vision, with a few other colleagues (Michel Bouet, José Maria Cagigal and José Ferrer-Hombravella) to organize in 1965 an international meeting dedicated entirely to sport psychology, inviting those persons from all over the world who dealt with this topic. During the organizing session of this Congress the International Society of Sports Psychology (ISSP) was founded on April 20, 1965. Purpose of this presentation is to illustrate Antonelli's mindset. His goals were to give to all those who worked in the field of psychological aspects of sport: (1) an organization that could unite them and make them recognized in the field of sports science and professional application; and (2) a Journal dedicated to the international diffusion of these issues. To gather information about these topics a literature review was conducted on online databases and from the Proceedings of the

KEYWORDS

Sport Psychology; Ferruccio Antonelli; ISSP; IJSP; History

First Congress-1965, IJSP first issues and other historical documents (letters, personal communications). Antonelli's legacy can be summarized by two main contributions. The first concerns the great force of realization that characterized him. He was the central driving of the ISSP foundation (Salmela, 1992). Antonelli was an innovator, he believed in his dreams and followed his vision, overcoming all obstacles. The second great result was the foundation of the International Journal of Sport Psychology (IJSP) "that marks out sport psychology as a scientific movement" (Antonelli, 1970, p.3). Initially, Alfred Morgan Olsen, ISSP vice-president, was charged with finding a publisher for a journal of sport psychology but unfortunately was unsuccessful. At this point Antonelli intervened (as he was likely to do), taking upon himself this responsibility and finding a publisher who was willing to take the risk of failure. He found him in the person of a dear friend, Luigi Pozzi. With just a handshake they took the decision to publish IJSP in 1970. Antonelli writes: "This issue witnesses the birth to a Review which is not mine but ours" (1970, p.5). In essence, these sentences testify to us how his personal decisions came before any form of delegation to others. This attitude, on the one hand allowed him to realize his dreams, which were certainly positive for the spread of sport psychology, but at the same time prevented him from developing a more shared leadership within the ISSP managing council. The pros and cons of this approach are further discussed in this presentation.

Sport psychologists' self-care: an introduction to the symposium

Alessandro Quartiroli

University of Wisconsin - La Crosse

ABSTRACT

Engaging in self-care has been proposed as a means of counteracting work-life stress that can negatively impact efforts by sport psychology practitioners (SPP) to effectively and ethically care for their clients. While a wide body of literature has been developed in the counseling psychology literature (c.f., Rupert & Dorociak, 2019), the systematic exploration of this important construct has only recently begun with a handful of studies emerging from a variety of methodological and theoretical perspectives. In this symposium, we aim to capture the existing knowledge focused on self-care in sport psychology professionals (SPPs). We argue that systematic and deliberate engagement in self-care practice is not only an ethical responsibility for SPPs but is also the bedrock for a long-lasting career. The symposium is organized within a professional development framework, with the first two studies focused on the conceptual and experiential perspectives on self-care among novice practitioners. In the first study, Martin and colleagues will present their qualitative exploration of 18 UK-based neophyte SPPs regarding their conceptualization of and experience with self-care. In the second

KEYWORDS

Professional practice; Self Care; Ethics

study, using a cross-section survey design, Martin and McCarthy will explore the self-care strategies used by UK-based sport and exercise psychologists and how they change throughout their development through training pathways. In the third presentation, Quartiroli and Wagstaff present a summary of existing research and speculate on the future of Sport Psychology Self Care. Their focus will be on presenting a body of work focused on the experience of globally situated SPPs across the career-span, and will devote special attention to presenting recommendations for current and future practitioners. Finally, Wagstaff and Quartiroli will conclude the symposium offering by an overview of how self-care might be integrated throughout the training and professional development of SPPs as well as how, while although fundamentally an individually grounded activity, the implementation of self-care can be advocated for and supported by numerous social agents and an important goal for professional organizations, training pathways and professional societies.

Self-care as the way for long lasting practice: what we know and what we need to know

Alessandro Quartiroli^a and Cristopher Wagstaff^b

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ABSTRACT

Sport psychology professionals (SPPs) have noted the importance of engaging in self-care as means to an effective, ethical, and long-lasting career. Professional developmental theories (Rønnestad & Skovholt, 2013; Tod, 2007) led us to explore how advanced career SPPs understand and conceptualize self-care as a way of learning how to approach this with the next generation of professionals. Yet, the absence of a clear conceptualization of sport psychology self-care (SPSC) has resulted in many SPPs not fully understanding the value of engaging in self-care practices or the variety ways to engage with these. In this presentation we focus on presenting a brief overview of the existing body of work focused on how senior and experiences SPPs experience and conceptualize SPSC. Using a variety of research methodologies and philosophical assumptions, scholars have developed an initial understanding of how SPPs perceive SPSC, how throughout their careers they have been able to embrace SPSC and what challenges they have experienced the directly impacted their well-being and/or have limited their ability to engage in self-care practices. Additionally, it will be presented how SPSC can be contextualized in relation to its professional counterpart, sport psychology professional quality of life, and how concurrently engaging in practices supporting the two is a key factor to providing ethical, effective, and competent applied services, and the foundation of a long-lasting career. Further, a newly developed definition of SPSC will be presented. Engaging in a consensus-seeking process, SPPs across different development stages developed and agreed on a shared definition of SPSC as

KEYWORDS

Professional practice; Self Care; Professional development

well as with a preliminary, non-finite, list of generally engaged practices and commonly experienced obstacles. To conclude this presentation, Quartiroli and Wagstaff will outline a series of recommendations for current and future practitioners regarding the development and maintenance of their own SPSC practices and will also provide scholars with an insight to potential opportunities for future research foci.

A qualitative exploration of neophyte sport psychologist practitioners self-care experiences and perceptions

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ABSTRACT

Self-care has been identified by scholars from psychology and mental health professions to be important for promoting personal and professional well-being among psychology professionals as well as an being an ethical imperative for practitioners who are bound to ethical codes of conduct and who wish to provide ethical and effective service delivery to clients (Barnett et al., 2007; Dorociak et al., 2017). Nevertheless, the value of self-care for sport psychology practitioners (SPPs) has received limited research attention, except for the investigation of senior SPPs' self-care (Quartiroli et al., 2019) and its link with professional quality of life (Quartiroli et al., 2021). The purpose of the current study was to better understand SPP self-care earlier on in individuals' professional development and to explore neophyte SPPs experiences of engaging in self-care. Therefore, we recruited 18 self-identified white neophyte SPPs from the United Kingdom (12 females and 6 males), aged between 24 and 52 years (Mage = 31.94, SDage = 7.81). We used purposeful and snowball sampling and participants took part in semi-structured interviews in which we explored their experiences of enacting self-care during their training. Five main themes were constructed following a reflexive thematic analysis of data: (a) What self-care means to neophyte SPPs (e.g., facilitating overall well-being and stability); (b) The cornerstones of self-care (e.g., mechanisms such as self-awareness that underpin self-care); (c) What facilitates neophytes self-care (e.g., ongoing support from a supervisor); (d) The self-care hurdles that neophytes face (e.g., managing multiple roles and competitive job markets), and; (e) The self-care actions that neophytes implement (e.g., self-care behaviours that relate to the care of self, care by others and care for others). These data contribute to the nascent body of literature exploring self-care within SPP populations and serve to illuminate neophyte SPPs' understanding of self-care and how they perceive their interactions with the profession to impact their ability to enact self-care. Concerns for the current lack of emphasis placed upon self-care in SPP training pathways and employment settings are raised, as well as key considerations for how greater awareness of self-care within neophyte cohorts can be fostered to better prepare future generations of SPPs.

KEYWORDS

Self Care; Neophytes;
Training; Practice; Qualitative

Sport psychology self-care: can it be a shared effort?

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ABSTRACT

In this final presentation of the symposium, Wagstaff and Quartiroli will discuss the potential role that social agents may play in influencing individual SPPs regarding self-care. That is, consideration will be given to how individual self-care rarely occurs in isolation and might be influenced by others in one's social network. For instance, SPPs interact with peers and supervisors, coaches, athletes, and science and medicine staff within their daily work. These interactions offer a mechanism to raise awareness of self-care activities aligned with personal values, while supporting the development of an environment where organizational and cultural obstacles to self-care are reduced, and peers help each other to develop and adhere to self-care plans. Importantly, our intention in this presentation is not to advocate for a 'one size fits all', but to acknowledge that there often exist commonly shared self-care resources and activity opportunities available to those interacting within a given sport context (e.g., a biosecure bubble, major competitions). Therefore, SPPs may help others through co-creation of self-care plans that are mutually supportive and additive, and limit conflict or depletion of resources shared between team members. SPPs might also attempt to influence organizational processes and procedures, which may act as either enablers or obstacles to integrated self-care. Indeed, self-care education, planning and implementation within sport systems may need to be part of a wider process of change rather than being considered as a purely individual endeavor. To bring such ideas to fruition, SPPs may need to challenge dominant ways of thinking and doing through work targeting the attitudes, beliefs and values of stakeholders in sport regarding self-care. Wagstaff and Quartiroli will conclude with considerations for how self-care might be integrated into professional organizations, training pathways and professional societies.

KEYWORDS

Self Care; Professional practice; Organizational Sport Psychology

Developments in emotion and mood research in sport

Peter C. Terry

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ABSTRACT

Emotions and moods are fundamental to human existence and exert enormous influence on athletes before, during and after sport performance. In this symposium, a group of researchers from five separate nations present recent developments in emotion and mood research in a series of four 12-minute presentations. The first presentation, by Andrew Lane from the

KEYWORDS

Affect; Emotion; Mood; Performance; Well-being

University of Wolverhampton, is a re-examination of a large online dataset gathered via the British Broadcast Corporation (BBC) Lab UK website. In his presentation, titled *Can Brief Interventions Protect Against Negative Emotions Following Defeat? Re-Examination of BBC Lab UK Data*, Lane addresses the question of whether engagement in brief psychological skills training can offset the negative effects of defeat on subsequent performance. The second presentation, titled *Mood Profile Clusters Among Chinese Athletes and Nonathletes*, brings together researchers from Australia, China, and Hong Kong. Presented on behalf of the team by Peter Terry, the presentation is based on an investigation into whether six mood profile clusters identified in the literature are evident among samples of Chinese-speaking adult and adolescent athletes and non-athletes, and assessment of variables that moderate the prevalence of particular mood profiles. The third presentation, by eminent Brazilian sport psychologist Regina Brandão, is titled *Psychometric Re-Evaluation of the Brazil Mood Scale and Evidence of Mood Profile Clusters Among Youth Athletes in Brazil* revisits the psychometric integrity of a measure of mood used throughout Brazil for a variety of purposes related to training volume, rehabilitation, performance, and athlete well-being. Brandão also offers insights into her applied practice with many professional athletes and national teams. The final presentation, titled *In the Mood for Triathlon*, describes an investigation into preperformance mood responses in the sport of triathlon, with a particular focus on clarifying relationships between mood, performance, and mental health. Presented by Renée Parsons-Smith on behalf of a multinational research team, results showed no predictive effectiveness of mood responses on performance but suggest an association between triathlon participation and absence of mental ill-health. Andrew Lane will act as discussant following the presentations.

Can brief interventions protect against negative emotions following defeat? Re-examination of BBC lab UK data

Andrew M. Lane

University of Wolverhampton

ABSTRACT

Emotions experienced before and during performance have a profound effect upon the quality of performance. It is common for athletes to attribute poor performance to an inability to regulate emotions, and for practitioners to help athletes learn psychological skills to assist emotion regulation. Research shows negative emotions follow losing and positive emotions follow winning, and if the athlete performs again, these emotions carry over into the next performance. However, effective use of psychological skills may dampen the negative effects of losing on subsequent emotions. A large-scale study of 44,742 participants, demonstrated that brief interventions increased the intensity of positive emotions and improved performance (Lane et al., 2016).

KEYWORDS

Emotion; Mood; Effort; Brief; Self-regulation

However, that study did not investigate the effects of losing performance on emotions, arguably a missed opportunity as participants competed against a computer-generated opponent. Using the same dataset, the present study examined the extent to which engagement in brief psychological skills training could offset negative effects of defeat on emotions, an hypothesis not previously investigated. The methods used in the present study follow those reported by Lane et al. (2016) where participants (N = 74,204) followed instructions narrated by 4-time Olympic gold medalist Michael Johnson, completed measures of emotions, competed in an online task to find numbers from a random grid, competed against a computer-generated opponent, and reported their meta-beliefs on the effects of emotions on performance. In the present study, interventions designed to raise motivation via an outcome-focused or process-focused goal were used. New control data comprised participants who did not engage in interventions and were not reported by Lane et al. (2016), leading to a sample of 39,310 participants (Age: M = 34.7 yr., SD = 14.0 yr.). Results confirmed the positive and negative effects of winning or losing on emotions, effort exerted and meta-emotional beliefs about the utility of emotions in helping performance. However, as hypothesized, the effects of losing were significantly smaller in the intervention group when compared to the control group. Significant interaction effects indicated that following an intervention, participants felt happier, less dejected, less angry, exerted greater effort during performance, and held more positive beliefs that emotions helped performance. When seen collectively, results showed that brief interventions helped regulate emotions following defeat more than no active training. Practically, interventions were brief and simple to follow and thus offer opportunities to be integrated into training to help athletes develop psychological skills.

Mood profile clusters among chinese athletes and nonathletes

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ABSTRACT

Mood profiling has a long history of use within sport and exercise psychology, dating back to the 1970s. Six distinct mood profiles have been reported in the literature, referred to as the iceberg, inverse iceberg, inverse Everest, shark fin, surface, and submerged profiles (Parsons-Smith et al., 2017). In the present study, we investigated whether these six mood profiles were also evident among a Chinese-speaking population. A well-validated Chinese-language version of the Brunel Mood Scale (referred to as the

KEYWORDS

BRUMS-C; Mood Profiling; Emotion; China; Online Assessment

BRUMS-C; Zhang et al., 2014) was completed by 2,548 participants (males = 1,330, females = 1,218; age range: 12-43 yr., $M = 17.8 \pm 3.83$ yr.), comprising adolescent athletes ($n = 520$), adult athletes ($n = 434$), adolescent students ($n = 673$), and adult students ($n = 921$). Adolescent and adult athletes completed the BRUMS-C before, during, or after a regular training session, whereas adolescent and adult students completed the BRUMS-C in a classroom setting. Multi-sample confirmatory factor analyses showed that a 23-item, six-factor solution offered the best fit and to was invariant at the configural, metric, strong, and structural levels for all samples (Zhang et al., 2014). Athletes reported significantly higher levels of fatigue than students while maintaining almost the same levels of vigour, and adolescent students reported significantly higher levels of depressed mood than the other three samples. Despite these observed group differences in mood scores, using k-means cluster analysis, the six hypothesised mood profiles were clearly identified in the overall sample and among each subsample individually. The prevalence of the clusters in the present sample differed from a normative sample ($N = 15,962$; Terry et al., 2021). For example, the prevalence of the negative inverse Everest (7.4% vs 4.6%) and inverse iceberg (15.7% vs 11.8%) profiles was higher among Chinese-speaking participants than the predominantly Caucasian normative sample (Terry et al., 2021). Conversely, the prevalence of the positive iceberg profile (19.8% vs 28.5%) was lower among the present sample compared to the normative sample. Within the present sample, males were overrepresented for the iceberg profile (56.3% vs 43.7%), whereas females were overrepresented for the inverse Everest (53.5% vs 46.5%) and shark fin profiles (53.7% vs 46.3%). The six mood profile clusters appear to be robust across different languages and nationalities and generalisable to athletes, nonathletes, adults, and adolescents.

Psychometric re-evaluation of the brazil mood scale and evidence of mood profile clusters among youth athletes in Brazil

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ABSTRACT

Mood profiling is used in Brazil for several purposes, including prevention of overtraining syndrome (Marques & Brandao, 2010; Rohlf, Rotta et al, 2008), evaluating cardiac rehabilitation patients (Brandt et al., 2014; Sties et al., 2014), and monitoring preperformance moods of youth athletes (Verardi et al., 2018). The Brazil Mood Scale (BRAMS; Rohlf, Terry et al., 2008) is a validated translation of the Brunel Mood Scale (BRUMS; Terry et al., 1999, 2003), a 24-item measure of six mood states (tension, depression, anger, vigour, fatigue, confusion). Using the BRAMS, we assessed

KEYWORDS

Mood; Brazil; Youth Sport; Well-being; BRAMS

the mood responses of 953 young Brazilian athletes (female = 483, male = 470; age range = 14-17 yr., $M = 15.0 \pm 1.2$ yr.). All data were collected prior to Brazil being afflicted by the COVID-19 pandemic, which has been shown to impact mood negatively (Terry et al., 2020). We also re-evaluated the psychometric characteristics of the BRAMS and investigated the prevalence of six distinct mood profile clusters reported in the literature, referred to as the iceberg, inverse Everest, inverse iceberg, shark fin, submerged, and surface profiles (Parsons-Smith et al., 2017). The measurement model of the BRAMS was supported using structural equation modelling ($\chi^2:df = 3.52$, CFI = .92, TLI = .93, RMSEA = .046). Correlations with mood scores among concurrent measures of resilience, perfectionism, and optimism were generally consistent with theoretical predictions. Tables of normative data for the BRAMS were refined, due to significant differences between reported means and existing norms. The six hypothesized mood profiles were clearly identified using k-means cluster analysis. Compared to BRAMS norms (Terry et al., 2021), the prevalence of negative profiles in the present sample was lower (inverse Everest: 3.8% vs 4.6%, inverse iceberg: 8.5% vs 11.8%, shark fin: 10.9% vs 15.5%) whereas the prevalence of normative profiles (surface: 21.7% vs 15.6%) and more positive profiles (iceberg; 33.2% vs 28.5%) was higher. This suggests a lower risk of mental health issues among the Brazilian sample of youth athletes than is typically found in English-speaking populations. Females reported more negative moods than males ($F = 3.88$, $p < .001$), scoring significantly higher for fatigue, confusion, and depressed mood. Compared to males, females reported a higher prevalence of the most negative profiles (inverse Everest: 5.6% vs 1.9%, inverse iceberg: 9.7% vs 7.2%). The present results provide further evidence of the robustness of the six mood profile clusters across different language and cultural contexts.

In the mood for triathlon

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ABSTRACT

Mood profiling is used in a variety of sporting contexts to, for example, predict performance from preperformance mood, monitor psychological responses to training load, injury, or travel across time zones, as a general indicator of psychological wellbeing, or to catalyze discussion between a sport psychologist and an athlete. The purpose of the present study was to investigate preperformance mood responses in the sport of triathlon, with a particular focus on clarifying relationships between mood, performance, and mental health. Participants were 592 triathletes (male: $n = 377$; female: $n = 200$; other/not specified: $n = 15$; age range 18-81 yr., $M = 39.9 \pm 11.1$ yr.) competing in one of three triathlons held in Queensland, Australia. Of those participants who indicated their ethnicity,

KEYWORDS

Triathlon; Mood Profiles; Performance; Mental Health; BRAMS

94.7% (523 of 552) were Caucasian. Participants completed the Brunel Mood Scale (BRUMS; Terry et al., 1999, 2003), on average, within 1 hour of their race commencing ($M = 55.4 \pm 37.9$ min.) and recorded their time goal for the race. In total, 42.2% of participants equalled or bettered their time goal. Significant sex differences in mood responses were evident (Wilks' = 0.931, $p < .001$) explaining 6.9% of variance, with females reporting higher tension scores than males. Mood scores did not predict self-referenced performance, which was assessed by finish time as a percentage of time goal. Mean mood scores showed significant deviation from established normative scores for all subscales, prompting the generation of triathlon-specific tables of normative data. Using both hierarchical and seeded K-means cluster analyses, six distinct mood profiles were identified in the present study, which approximately corresponded to profiles identified previously (Parsons-Smith et al., 2017). The distribution of specific profiles was consistent with the general population, except for a low prevalence of very negative profiles among the triathletes. Mean scores for depression and anger were exceptionally low and only 9 participants (1.5%) reported an inverse Everest profile, which is associated with elevated risk of psychopathology, compared to the normal prevalence of ~5%. Results suggest an association between triathlon participation and absence of mental ill-health. It is anticipated that the development of triathlon-specific norms for the BRUMS will benefit future investigations of mood responses among triathletes and assist the work of applied practitioners working in the sport.

Exercise and cognitive function: an overview and perspectives

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ABSTRACT

The beneficial effects associated with exercise have been extended to cognitive function, whereby both acute exercise and chronic acute exercise were observed to be positively linked to a variety of cognitive functions. The symposium will firstly address the overview and perspectives concerning issues of exercise and cognitive functions, and then will present four studies in order to advance the current knowledge in this research area. The first paper, presented by Jingyi Ai, will address the effects of acute high-intensity interval training on executive functions, from systematic review perspectives. The second paper, presented by Ying-Chu Chen, will examine the effects of acute concurrent exercise on the inhibitory aspect of executive functions. The third paper, presented by Chih-Han Wu, will address the relationship between cardiorespiratory fitness and sustained attention in adults. The fourth paper, presented by Chien-Heng Chu, will examine the effects related to cardiorespiratory fitness and acute stress on the inhibitory aspect of executive functions.

KEYWORDS

cognitive functions; acute exercise; executive functions

A systematic review of evidence on the effects of acute high-intensity interval training on executive function

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ABSTRACT

It is well known that physical exercise is important to promoting executive function. However, inconsistent research findings were shown regarding acute exercise intensity, particularly on whether HIIT (High-Intensity Interval Training, HIIT) can improve executive function. This systematic review aimed to fill this research gap. The objective of this study is to conduct a systematic review of the effectiveness of HIIT interventions on executive function. Standard databases (i.e., the PubMed and CENTRAL databases) were searched for studies that examined the effects of acute HIIT on EF, and that were published up until January 2021. The overall EF and factors were grouped by three categories, namely, EF assessment characteristics, exercise intervention characteristics, and sample and study characteristics, which were analyzed by using a percentage of comparison for positive or null/negative effects. Overall, 35 of 57 outcomes (61%) across 24 studies revealed that acute HIIT has a positive effect on overall EF. In terms of factors, the results indicated that among EF assessment characteristics, groups, inhibition, updating, and the assessment occurring within 30 minutes following the intervention may moderate the effects of acute HIIT on EF, while among exercise intervention characteristics, total time, within 11 to 30 minutes, may moderate the effects. Finally, among sample characteristics, being aged under 40 years may moderate the effects. This study is intended to provide insight into the alteration of executive function from an acute HIIT. The results can support future studies that acute HIIT is generally considered a viable alternative for eliciting EF gains, with factors related to EF components, timing of the assessment, exercise total time, and age potentially moderating the effects of HIIT on EF.

KEYWORDS

acute exercise; cognitive function; high-intensity interval training; executive function

Effects of acute concurrent exercise on stroop test

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ABSTRACT

Growing evidence suggests that exercise may improve cognitive function in the short and long-term. Aerobic exercise (AE) has been investigated most extensively, and preliminary works

KEYWORDS

concurrent exercise; Stroop test; inhibitory control; executive function

suggest that resistance training (RT) also improves cognitive function. However, the concurrent exercise (CE) which combines AE and RT in single bout of exercise whether improves cognitive function is still not clarified. The objective of this study is to examine the acute CE and the cognitive function performance of Stroop test. Thirty healthy adults (age: 23.9 ± 2.9 years, body weight: 75.44 ± 10.11 kg.) without regular exercise in the past 3 months were recruited. All participants performed 10 RM test of four upper body exercises (bench press, bent-over row, standing dumbbell lateral raise, and seated biceps curl) and Lode protocol of cycle ergometer for the prediction of maximal oxygen uptake (O₂max) and maximal work load (W_{max}) oxygen uptake. One week later, the study assigned participants into in counter balance order and within subject crossover design of control group and CE group which performed RE (4 sets of 10 repetitions at 70% of 10RM) follow by AE (65% O₂max & corresponding W). Participants completed a Stroop test (5 conditions included: word, congruent, square, neutral, and incongruent) before(pre), right after(post), and 30 mins later(post-30) of each intervention. In addition, each intervention separated by 7 days. In this study, statistical analysis of a two-way analysis of variance (intervention by time) with repeated measures was applied. Statistical significance set at $\alpha = .05$. Regarding the 5 conditions of Stroop test, CE group had shorter response times and higher accuracy performance compared to the control group. In addition, there were significant time effects for the CE group right after the intervention. The results of this study indicated that CE will improve the inhibitory control and execute function compared to the control group. This finding could establish the basic foundation of exercise prescription, and provide further evidence of CE might be beneficial to improving cognitive functions. Future research should continue to probe the investigation of different orders or ratios between aerobic and resistance exercise which might lead to the optimal results.

The relationship between cardiorespiratory fitness and sustained attention in adults

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ABSTRACT

Sustained attention, playing an important role in daily of life, is an ability characterized by a readiness to detect rarely and unpredictably encountered conditions of the environment that might require our intervention. Regular exercise or higher levels of fitness have been linked to better aspects of cognitive functions, particularly executive functions. Notably, while the beneficial effects of fitness on general sustained attention have

KEYWORDS

physical activity; executive function; brain health

been observed, the role of fitness on the executive function associated with sustained attention remains unknown. The aim of this study was to examine the effects of fitness levels on the executive function associated with sustained attention. Using a between-subjects design, seventy-eight healthy young adults (20-35 years) were recruited and divided into a high-fitness group and a low-fitness group, based upon their VO₂max levels. Specifically, the high- and low-fitness groups were adults with a VO₂max above 45.6 and below 41.7 for males; and above 39.5 and below 36.1 for females. Sustained attention was measured by using a modified version of the Stroop Test, which involved congruent and incongruent stimuli. Participants were required to conduct 5 blocks of the examination, each of 12 minutes, for a total of 60 minutes. The results revealed a main effect of Fitness, with shorter RTs in High Fitness (552.69 ± 13.74 ms) than Low Fitness (623.70 ± 13.74 ms) in Stroop conditions. There is also a main effect of Stroop conditions, with shorter RTs in the congruent condition (566.11 ± 8.78 ms) than those in incongruent condition (610.28 ± 10.99 ms). These findings replicated those of a previous study that targeted sustained attention, and extended the positive effects potential from fitness to the executive function associated with sustained attention.

The effects of acute stress and cardiorespiratory fitness on a stroop task performance: an ERP study

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ABSTRACT

Acute stress (AS) and cardiorespiratory fitness (CRF) have been individually linked to cognitive functions. Nevertheless, insufficient research has examined the simultaneous influence of AS and CRF on the cognitive functions. Using both behavioral and neuroelectrical assessments, this study aimed to simultaneously examine the influence of AS and CRF on the inhibitory aspect of the cognitive functions. Healthy young adults, aged between 20-30-years-old, were recruited and grouped into either High-Fitness (HF, $n = 33$) or Low-Fitness (LF, $n = 33$) groups, based on their CRF levels. All participants completed the Stroop task in two separate, counter-balanced sessions (i.e., the AS and the Control sessions) and their respective neuroelectrical activities were recorded throughout the experiment. Their behavioral performances (i.e., reaction times (RT) and accuracy) on the two Stroop task conditions (i.e., congruent and incongruent) and the P3b components of their event-related potentials were analyzed, as well as their behavioral and neuroelectrical indices, respectively. The results from a 2-way mixed ANOVA revealed that HF demonstrated shorter RT regardless of the Stroop conditions, and shorter RT in the AS condition, than did the control condition group ($p < 0.05$). No such difference was

KEYWORDS

acute stress;
cardiorespiratory fitness;
P3b; inhibitory control

observed for the LF. A three-way mixed ANOVA of P3b components revealed a Group × Treatment interaction, such that HF had smaller P3b amplitude in the AS than those in the control condition ($p < 0.01$); whereas, no significant difference was observed for the Low-Fitness group. The results indicated that, compared to individuals with lower CRF, AS resulted in enhanced cognitive performance, but less engaging attentional resource allocations, upon those with a higher CRF. Accordingly, our findings might be suggestive of a potential beneficial effect of higher CRF on cognitive processing involving both basic and inhibitory controls.

Effects of exercise intervention on cognition and emotion and its neural mechanisms

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ABSTRACT

Previous studies have found that exercise intervention could improve mood and cognition. This symposium focuses on several specific groups, such as middle-aged people, obese young adults, and autistic children. Through the exercise intervention experiment, this symposium explores the improvement of negative emotions or cognitive functions such as decision-making and executive function by exercise, as well as the underlying neural mechanisms. The results show that (1) 12-week Tai Chi Chuan can increase the negative emotions of middle-aged people and have an effect on the thalamus; (2) 30 minutes of acute aerobic exercise may promote self-control and improve food decision-making in obese young adults by increasing L-DLPFC activation; (3) football juggling learning can effectively improve executive function performance, and reconstitute functional connectivity; (4) mini-basketball exercise intervention may improve executive function in autistic children by increasing the volume of cingulate gray matter.

KEYWORDS

Exercise intervention;
Negative emotion; Executive
Function; Decision-making;
Brain Mechanisms

Executive function and brain functional connectivity adaptations following football juggling learning: a longitudinal experimental study

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ABSTRACT

The behavioral cross-sectional studies showed that motor skill learning is associated with executive function (EF) and brain functional connectivity. However, it is not clear whether motor skill learning improves EF performance and its neural mechanism. The study is to explore EF and brain functional connectivity adaptations following football juggling learning. Further investigation to identify the neural mechanisms of the effect of football juggling learning on EF. This study will provide a comprehensive evidence for the relationship between motor skill learning and EF. 111 participants (aged 17-19 years) were recruited and randomly divided into a football juggling learning group and a control group. The football juggling learning group learned football juggling for 70 times, while control group had regular study sessions at the same time. All participants had functional magnetic resonance imaging (fMRI) acquisition in a GE Discovery MR750W 3 Tesla machine and behavioral assessment prior to and following the learning. The group-by-time repeated-measures analyses of variance (ANOVAs) were used to investigate the performance of the EF. The functional connectivity data were preprocessed and analyzed using Statistical Parametric Mapping (SPM12) and the CONN toolbox. The behavioral performance results demonstrated that EF was enhanced by football juggling learning. Relative to the control group, the football juggling learning group showed increased functional connectivity in the left temporal pole (TP) to left frontal orbital cortex (FOrb), left temporal pole (TP) to right frontal orbital cortex (FOrb), right cerebellum 4 5 (Cbe4-5) to right superior temporal gyrus, posterior division (pSTG), left frontal orbital cortex (FOrb) to left superior temporal gyrus, posterior division (pSTG), left frontal orbital cortex (FOrb) to right middle temporal gyrus, temporooccipital part (toMTG), right superior temporal gyrus, posterior division (pSTG) to left cerebellum 6 (Cbe6), right superior temporal gyrus, posterior division (pSTG) to left occipital pole (OP). Furthermore, we found an increased functional connectivity in the right pSTG to right Cbe6 was associated with a better EF performance for football juggling learning group. These results suggest that football juggling learning can effectively improve EF performance, and reconstitute functional connectivity. Additionally, the football juggling learning improve EF performance was probably derived from brain connectivity reorganization. Our study provides a novel insight into the relationship between motor skill learning and EF.

KEYWORDS

football juggling learning; motor learning; executive function; functional connectivity; functional magnetic resonance imaging

The effect of acute aerobic exercise on food decision-making in obese young adults: evidences from fnirs experiment

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ABSTRACT

Food decision-making refers to the mental process in which individuals make a decision about whether to eat a food by integrating the health and taste values of the food. Self-control plays an important role in food decision-making. It has been found that aerobic exercise can promote individual self-control. In the present study, acute moderate aerobic exercise was used as an intervention method to explore the improvement effect of the food decision-making of obese young adults and underlying mechanisms. Baseline (30 min rest period) and after a single 30 min acute moderate aerobic exercise, 28 obese young adults (Sex: 15 males, 13 females; Age: 19.35 ± 0.91 years; BMI: 31.53 ± 2.52 kg/m²) were monitored accompanying brain activation by functional near-infrared spectroscopy (fNIRS) technology in a food decision-making task. 29 normal BMI young adults (Sex: 14 males, 15 females; Age: 19.79 ± 0.86 years; BMI: 21.14 ± 1.59 kg/m²) were used as the control group. Statistical analyses revealed that 30 min acute moderate aerobic exercise significantly increased the percentage of successful self-control trials; increased the percentage of disliked-healthy and liked-healthy food items, decreased the percentage of liked-unhealthy food items. Imaging data analysis revealed that 30 min acute moderate aerobic exercise significantly increased I-DLPFC activation associated with food decision-making in obese young adults. But the obese group did not reach the normal BMI control group level after acute exercise intervention. The current research has confirmed the improvement effect of 30 min acute moderate aerobic exercise on the self-control in a food decision-making task. At the same time, the study found that exercise has an obvious effect on I-DLPFC, which can improve I-DLPFC activation. Acute moderate aerobic exercise increasing I-DLPFC activation to promote self-control may be a neurological basis to effectively improve food decision-making of obese young adults. These findings helped to reveal the effect of acute aerobic exercise on obese young adults, on the other hand, they also provided meaningful scientific evidence for the improvement of obesity, as well as the application of exercise intervention in obese young adults. It is suggested that long-term aerobic exercise intervention may be used to improve food decision-making in obese young adults.

KEYWORDS

aerobic exercise; obese young adults; food decision-making; fNIRS

Brain mechanism of tai chi chuan mind-body exercise improving negative emotions in middle-aged adults

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ABSTRACT

The presence of emotional problems may reduce the life quality of individuals, or even disrupt their physical health and cognitive

KEYWORDS

Tai chi chuan intervention; Negative emotion; Thalamus;

ability. It has been found that Tai Chi Chuan (TCC), a traditional Chinese mind-body exercise can promote individual emotional health, especially negative emotions. In the present study, TCC was used as an intervention method to explore the improvement effect of the negative emotions of middle-aged people and underlying mechanisms. A total of 50 eligible middle-aged participants finished the pre-test and post-test. Participants in TCC group (Sex: 14 males, 18 females; Age: 49.44 ± 8.94 years; Education: 14.72 ± 2.53 years) were given TCC intervention once a week, 3 hours each time and last for 12 weeks, while the participants in the control group (Sex: 5 males, 13 females; Age: 50.61 ± 5.03 years; Education: 14.28 ± 1.74 years) did not participate in the exercise. The emotional level and mindfulness level of all the participants were tested before and after the intervention. In order to explore the brain mechanism of TCC exercise, participants also underwent MRI scans. Statistical analyses revealed that compared with the control group, after 12 weeks of TCC intervention, negative emotional scores of the participants in the TCC group reduced, their emotional stability and inner peace level exhibited improvement. Besides, there was a significant correlation between the increase of the scores of inner peace and the decrease of their total mood disturbance scores. Imaging data analysis revealed that compared with the control group, the amplitude of low-frequency fluctuation in thalamus of TCC group decreased significantly in 0.01~0.1 Hz frequency band and slow-5 sub frequency band (0.01~0.027 Hz) after TCC intervention. At the same time, the regional homogeneity in similar areas also showed a decrease. The current research has confirmed the improvement effect of 12 - week TCC exercise on the negative emotions and calm mood of middle-aged exercisers and the correlation between them. At the same time, the study found that exercise has an obvious effect on thalamus function, which can improve the stability of spontaneous fluctuation of thalamus signal and the degree of functional differentiation of the region. These findings helped to reveal the effect of TCC on practitioners, on the other hand, they also provided meaningful scientific evidence for the prevention and improvement of negative emotion, as well as the application of TCC prescription in healthy individuals and clinical patients.

Amplitude of low-frequency fluctuation; Regional homogeneity

Effects of mini-basketball exercise intervention on executive function and gray matter volume in preschool ASD children

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ABSTRACT

Autism spectrum disorder (ASD) is a neurodevelopmental disorder (NDD) characterized by persistent deficits in social communication and interaction and the presence of repetitive behaviors and/or restricted interests. Executive dysfunctions have been found to be

KEYWORDS

Autism Spectrum Disorder; Mini-Basketball; Executive Function; Gray Matter Volume

related to repetitive/disinhibited behaviors and social deficits in autism spectrum disorders. Evidences have shown that sports as an effective intervention method can promote the physical and mental health of children with ASD and improve their executive functions, but the neural mechanism has not been revealed yet. Objective: To explore the effect of the mini-basketball training program (MBTP) on the executive function and brain gray matter volume (GMV) in preschool ASD children, and to provide new evidence for revealing the neural mechanism of the mini-basketball training program to improve the executive function in preschool ASD children. Thirty-six preschool ASD children aged 3-6 years were recruited from a children's development center in Yangzhou, which met the diagnostic criteria of the DSM-V. All participants were randomly assigned into control or exercise group. The exercise group was offered a mini-basketball exercise program at moderate intensity for 40-min, five times per week for 12 weeks. All participants were subjected to complete EF tasks (Gift wrapping task, Candy delay task, Graphic stroop control task, Find stickers task, Day/night stroop task, Clap hands task, Say digits task) and brain scans both at baseline and after intervention for detecting changes of EF behavior performance and GMV, based on the voxel-based morphometry (VBM) technique. Compared with the no-intervention, the exercise intervention benefited performance in the EF task [$F(1, 34) = 7.73, P = 0.016 < 0.05, \text{partial } \eta^2 = 0.37$], increased gray matter volume in the left Median Cingulate and Paracingulate Gyrus (MIN coordinates: -9, 10.5, 37.5, 298 voxels). Further, left Median Cingulate and Paracingulate Gyrus had a significant correlation with EF performance improvement ($r = 0.45, P = 0.033 < 0.05$). These data extend the current knowledge by indicating that mini-basketball exercise intervention enhances preschool ASD children's EF, which the neural basis may be related to the increased GMV in the left Median Cingulate and Paracingulate Gyrus elicited by mini-basketball exercise intervention.

The effect of exercise on executive function and academic achievement: non-experimental study

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Institute of Psychology Chinese Academy of Science

ABSTRACT

Through systematic review, meta-analysis and large sample analysis, the studies of this symposium discussed the effect of exercise on executive function and academic achievement. The results of a meta-analysis of these studies indicated that Chinese mind-body exercise improves overall executive function, as well as its sub-domains. The systematic review results show that the concurrent performance of core executive function during an acute bout of exercise is complex. Big data analysis suggested that optimal movement behaviors may be a contributing factor to better academic achievement among the U.S. adolescents.

KEYWORDS

Chinese mind-body exercise; Acute Exercise; Physical activity; Executive Function; Academic Achievement

These results suggest that Chinese mind-body exercise, acute exercise, and physical activity are effective ways to improve executive function, or improve academic performance, and provide a theoretical basis for future research.

Chinese mind-body exercise and executive function in middle-aged and older adults: a meta-analysis

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ABSTRACT

Chinese mind-body exercise (CMBE) is positively associated with executive function (EF), but the synthesized evidence regarding the effects of CMBE on EF has yet been conducted. The present meta-analysis attempted to determine whether CMBE affects EF and its sub-domains, as well as how exercise, sample, and study characteristics moderate the causal relationship between CMBE and EF in middle-aged and older adults. Seven electronic databases including the PubMed, Web of Science, Embase, Cochrane Controlled Trials Register, Wanfang, China National Knowledge Infrastructure, and Weipu databases were searched for relevant studies published from the inception of each database through June 2020. Randomized controlled trials of CMBE in adults of mean age ≥ 50 years, with at least one outcome measure of EF, were included, with 29 studies ($N = 2,934$) ultimately being included. The results of a meta-analysis of these studies indicated that CMBE improves overall EF (Standardized Mean Differences = 0.23, 95% CI 0.14, 0.32), as well as its sub-domains. The beneficial effects of CMBE on EF occurred regardless of the type, frequency of group classes, session time, total training time, and length of the CMBE, but CMBE interventions with more frequent combined group class and home practice sessions (≥ 5 times per week) had larger effects. The positive effects of CMBE on EF were also demonstrated regardless of participant age, gender, and cognitive and health status, as well as training mode and study language, with CMBE interventions having additional effects compared to other types of interventions. This review thus suggests that CMBE is a promising intervention with small positive effects in terms of enhanced EF, and that more frequent group class and home practice sessions may increase these effects.

KEYWORDS

aging; cognitive function; physical activity; Tai Chi; Qigong

Systematic review of core executive function performance during acute bouts of exercise

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ABSTRACT

Physical exercise is not only beneficial to physical health, but also to brain and cognitive health. Studies have shown improved executive function performance following a bout of exercise. However, the concurrent performance of executive functions (EFs) during an acute bout of exercise remains poorly understood. The purpose of this review was to clarify the effects of an acute bout of exercise on concurrent performance of core EF during the exercise. Four electronic databases (PubMed, Web of Science, PsycINFO, and SportDiscus) were searched from inception dates to December 2020. Inclusion criteria are as following: (1) examined the concurrent performance on core EF during a acute bout of exercise; (2) employed an experimental design with a comparison to a control group/condition; (3) objectively evaluated core executive functions as the outcome variable (defined as inhibitory control, working memory and cognitive flexibility); (4) participants are limited to adults. The search process, study selection, data extraction, and study quality assessment were carried out independently by two researchers. A total of 5,767 studies were identified. Twenty-two studies met our inclusion criteria. Of the 44 reported effects, in 22 studies, twelve (28%) of the 44 effects showed that core EFs performance was enhanced during exercise and 16 (36%) found that core EFs performance did not differ from control condition. Sixteen (36%) found that core EFs performance was impaired during exercise. The available evidence drew a complex picture of the performance of core EF during an acute bout of exercise. Collectively, the findings of the current review indicate that exercise intensity is an important factor influencing the core EFs performance while simultaneously performing exercise. In addition, task paradigm with variable testing time points is another factor influencing the concurrent performance. Our findings also indicate alternations in cerebral blood flow (CBF) and cerebral oxygenation are not directly associated with changes in EF during exercise. The concurrent performance of core EF during an acute bout of exercise is complex. The beneficial effects of concurrent performance are predominantly observed during moderate-intensity exercise. The findings also suggest that the transient hypofrontality most likely occurs during vigorous-to high-intensity exercise.

KEYWORDS

Executive Function; Exercise;
Concurrent Performance

The symposium on proprioceptive and motor function in typical and atypical motor development

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ABSTRACT

This symposium seeks to discuss the relationship between proprioception and motor functions, and possible interventions for improving sensorimotor performances during typical and atypical motor development. Four related presentations were organized to highlight this topic. The first presentation by Chung-Wei Wang provides empirical evidence on the importance of proprioceptive function in school-aged children with and without motor difficulties. The second part of the symposium by Yi-Wen Chen discusses the neural correlates underlying the proprioceptive process and how such neural signatures are linked to one's motor proficiency. The next presentation by Loqin Xu describes whether neural muscular training could positively affect limb position sense in children. The last presentation by Hao-Wen Chi provides a novel view of whether kinesio taping enhances the wrist position sense in children with probable developmental coordination disorder. This symposium delivers scientific evidence of the reciprocal roles of proprioceptive and motor functions and offers new insights for clinical applications in typically and atypically developing individuals.

KEYWORDS

position sense; Kinesthesia; children; motor control; motor skills

Joint position sense of knee and ankle joints is impaired and related with balance function in children with probable developmental coordination disorder

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ABSTRACT

The objective of the present study was to determine the joint position sense of the knee and ankle joints and its relationship with motor function in children with probable developmental coordination disorder (PDCD). A total of 36 participants were recruited; 18 children with PDCD and 18 typically developing children (TDC). Knee and ankle joint position sense acuity were evaluated employing a Biodex isokinetic dynamometer. Joint position acuity was measured by position error (PE) and position error variability (PEV). Motor function was examined exploiting the 2nd edition of Movement Assessment Battery for children (MABC-2) and quantified via sub-scores from 3 MABC-2 domains. Proprioceptive acuity data (e.g. PE and PEV) were analyzed using a Group (2 levels: children with SDCD and TDC) × Joint (2 levels: knee and ankle) mixed analysis of variance (ANOVA) model. Results showed that both PE and PEV at the knee and ankle joints were significantly greater in children with PDCD compared with TDC ($p < .05$). In addition, both the PE and PEV data were significantly greater at the ankle joints than the knee joints in children with PDCD ($p_s < .05$). For children with PDCD, joint position acuity in the knee and ankle joints significantly and

KEYWORDS

developmental coordination disorder; proprioception; ankle; balance

negatively correlated with MABC-2 balance sub-score ($p < .05$). The present study verified that both knee and ankle proprioception are impaired in children with PDCD. Also, children with PDCD displayed greater proprioceptive deficits at the ankle joint compared with the knee joint. Children with PDCD who had poorer joint position acuity, i.e. greater PE and PEV, in the knee and ankle joints tended to perform less well in balance function.

Neural correlates of kinesthesia in healthy young adults: a somatosensory ERP study

Yi-Wen Chen, Tsai-Feng Chiu, Chun-Hsiang Chuang, Yi-Hsuan Lin and Yu-Ting Tseng

National Tsing Hua University

ABSTRACT

Kinesthetic information allows humans to perform precise and coordinated movements by repeatedly updating information of limb and body motions. Previous studies have documented that kinesthetic sensitivity is closely associated with motor proficiency. However, it is still unclear how neural correlates underlie the kinesthetic process and to what extent are such measures linked to one's motor proficiency. This study addresses this knowledge gap by examining somatosensory event-related potentials (ERP) while participants performing a lower limb kinesthetic task. Six young female adults aged between 20-21 years performed an ankle motion detection task. They were asked to place their dominant foot on the paddle of the ankle apparatus, which passively moved the ankle joint at constant velocities of $22^{\circ}\cdot s^{-1}$. Participants were required to press the button held by the dominant hand as quickly as possible once they sensed the motion of the ankle. We evaluated behavioral measures (i.e., motion detection time, MDT), somatosensory ERP (i.e., N1 components), during the kinesthetic motion detection. The Bruininks-Oseretsky Test of Motor Proficiency 2nd edition long-form (BOT-2, LF) was employed to assess different domains of motor ability in each participant. Pearson's correlation analysis revealed that the MDT significantly correlated with standard scores of BOT-2 total motor composites ($r = -.909$, $p = .012$), strength and agility ($r = -.916$, $p = .01$), and manual coordination ($r = -.821$, $p = .045$). Furthermore, somatosensory ERP findings revealed a significant negative correlation between N1 amplitude over the somatosensory cortex and MDT during the ankle motion detection task ($r = -.83$, $p = .04$). The N1 amplitude also significantly correlated with fine manual control of BOT-2. ($r = -.86$, $p = .03$). We conclude that kinesthetic sensitivity is strongly associated with motor proficiency in healthy young adults. Moreover, the somatosensory ERP reflects not only the behavioral measures of the ankle kinesthesia but also the motor proficiency measured by the standard test of BOT-2. Our preliminary study supports the feasibility of examining neural correlates of the kinesthetic sense that linked to motor proficiency in healthy young adults, which could further be used to compare to that of patients with somatosensory or motor dysfunctions.

KEYWORDS

Proprioception; somatosensation; reaction time; lower limb; EEG

Effects of neuromuscular intervention on lower limb position sense acuity in typically developing children

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ABSTRACT

Proprioceptive information plays an important role in motor control and movement coordination across developmental stages. Neuromuscular training such as plyometric training (PT) has been found to enhance motor performances in children. Previous findings on such benefits of PT were mostly based on the comparison between a traditional control group versus an exercise group. Whether similar findings are found for the comparison between active control and PT group remains unknown. Here, we incorporated an active control group in the present study, aiming to examine the effects of plyometric training on ankle position sense acuity in typically developing children. Forty-two typically developing children aged 10-11 years participated and were assigned to either a PT group ($n=22$) or an active control group ($n=20$). Children in the PT group received a total of 16 sections of plyometric training (2 sections/week, for 8 weeks) including bounding, zigzag/front/side hops, rim/depth/front jumps. The active control group received a similar amount of physical intervention (i.e., basketball games) with no PT included. All children performed ankle joint position sense reproduction of the dominant foot before and after the training sessions. The absolute position sense error (PE), and position sense error variability (SDPE) were obtained to assess ankle position sense acuity. The three-way repeated measure ANOVAs [2 GROUP (PT vs active control) \times 2 CONDITION (1° vs 13° of ankle plantar flexion) \times 2 TIME (pre vs post)] was performed for PE and SDPE. The results revealed a main effect of TIME was detected ($p < .001$) for PE and SDPE, indicating that the position sense error and error variability at the post test was lowered than that of the baseline for children in both groups. We also found a significant TIME*GROUP interaction ($p < .001$) for SDPE, indicating the active control group showed a more decreased SDPE than the PT group did. This study concludes that both PT and active control group demonstrated an improvement of ankle position sense acuity after eight weeks. However, no significant higher position sense acuity was found for the PT group than the active control group after training sessions, suggesting that both groups of children showed similar improvement of position sense acuity. Our findings hint that 8-week of physical intervention might be sufficient to improve position sense acuity regardless of training types. Future studies would be required to extend the length or amount of PT training for improving ankle proprioceptive acuity.

KEYWORDS

Somatosensory;
Proprioception; lower limb;
motor development

Effects of tension of kinesiio taping on wrist joint proprioception for children with suspected developmental coordination disorder

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ABSTRACT

Previous studies have reported that children with developmental coordination disorder exhibit poor proprioceptive performance at the wrist joints (i.e. reduced position sense acuity), which likely further contributes to their fine motor dysfunctions. However, to the best of our knowledge, no research has yet investigated the effectiveness of tension of kinesiio taping (KT) on wrist joint proprioceptive acuity in children with developmental coordination disorder. Hence, the purpose of this study was to determine the effects of various tension of KT on the proprioception of the wrist joint in children with suspected developmental coordination disorder (SDCD). There were 22 participants recruited; 11 children with SDCD and 11 typically developing children (TDC). Wrist joint position sense were evaluated employing a valid and reliable customized experimental apparatus. Both the ipsilateral and contralateral joint position tests were exploited. Proprioceptive acuity data was examined by position error variability (PEV). There were three experimental conditions, no taping, 50% KT tension, and 100% KT tension. Proprioceptive acuity data were analyzed using a Group (2 levels: children with SDCD and TDC) × Condition (3 levels: no taping, 50% KT tension and 100% KT tension) mixed analysis of variance (ANOVA) model. The result showed that, in no-taping condition PEV at wrist joint was significantly greater in children with SDCD compared with TDC ($p < .05$). In addition, in ipsilateral joint position test only, PEV at wrist joint was significantly less in both the 50% and 100% KT conditions as compared to the no taping condition ($p < .05$). This study demonstrated that KT can be consider as an effective intervention to ameliorate wrist joint proprioception problems for children with SDCD.

KEYWORDS

developmental coordination disorders; kinesiio taping; tension; wrist; proprioception

Team coordination: dynamics and acquisition

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ABSTRACT

The purpose of this symposium is to provide a discussion, grounded in dynamical systems, on how team coordination in a ball possession football game can emerge differently as a function of skill levels. Critically, the discipline of motor control and learning has revealed the mechanisms of individual motor skill acquisition and therefore provides a suitable platform to examine how team

KEYWORDS

Collective Dynamics; Task Constraints; Skill Level; Interpersonal Motor Skill; Nonlinear Pedagogy

coordination dynamics can be shaped in diverse ways. Also, performance analysis studies in sports have mostly considered individual measurements, such as various physiological variables (e.g., cardio-vascular or acceleration data). However, examining team sports will add several layers of complexity, and thus could benefit greatly from new approaches of analysis that consider collective actions. Many recent studies have focused on the interpersonal coordination and/or joint action not only in the laboratory task but also in sports activities from a dynamical system perspective. However, it remains unclear how interpersonal coordination in a team game context can impact collective team behaviours subsequently. In this symposium, we would like to discuss how team coordination is impacted as a function of skill levels (i.e., among different skill level players) with reference to interpersonal coordination from the perspective of dynamical systems theory. For this end, we have three speakers and one discussant. Firstly, Dr. Kijima will present empirical data about a 4v2 ball possession task in football, and specifically show how team coordination emerges differently across three different levels of skills. Based on the same data, Dr. Nakayama will discuss the effectiveness and limitations in the 4v2 ball possession task, and the relationship among different skill levels in the context of interpersonal motor skill in a football match. The third speaker, Mr. He and Dr. Komar, will evaluate flexibility and adaptability of team playing styles in football, and show the importance of adaptability based on the analysis of flexibility in team performance. The discussant, Dr. Chow, will adopt a Nonlinear Pedagogy perspective to share insights about the impact of skill levels and task constraints on the emergence of game play behaviours. The focus could be on designing practice sessions where players can be provided with more opportunities to be attuned to different movement possibilities and collective team coordination dynamics.

Bifurcation and switching of the (a)symmetrical patterns of the players' role in the meta-stable state of the 4-on-2 ball keeping away soccer game

Akifumi Kijima

Yamanashi University

ABSTRACT

We experimentally investigated the soccer players' collective behavior in the 4x2 ball possession game and analyzed the difference about the symmetry of the players' role depending on the skill level. Groups comprising four soccer players were asked to pass a ball in a circular pitch ($\phi=11$ m) against two distractors. Three out of four players were asked to position around the edge of the pitch and to move along the circular path (i.e., edge players), while the fourth player was asked to position in the middle (i.e., a center player). Two distractors were asked to

KEYWORDS

Geometrical Pattern of the Collective Behavior; Symmetry of the Players' Role; Soccer Expertise

pursue the trajectory of the ball and interrupt it. Triads of edge players in the lower division (lower level) were positioned far from each other, and they passed the ball along a triangular trajectory that was wide enough to contain the center player and two distractors. Triads of lower rank edge players in the upper division (middle level) were positioned close to each other so that when they passed the ball to each other, the center player was pushed out from the triangular path. Thus, four players (including the edge and center players) passed the ball along a rectangular path that enclosed the distractors' pursuing behavior. Finally, three upper rank edge players in the upper division (top level) moved such that the distances between them varied, which in turn varied the role of the center players. The two alignment patterns of the four players (i.e., triangular and rectangular alignments) varied transiently depending on the distractors' action. In general, the role of each player depends on their position on the pitch. We hypothesized that the roles of the four players in possessing the ball can be bifurcated so that they are symmetrical and the geometrical pattern of the alignment of the four players becomes a rectangle. When the skills of the players improve and they progress to the top skill level, their alignment would switch between symmetrical and asymmetrical (i.e., triangle containing a center player) depending on the dynamic state of the game environment. This bifurcation and the meta-stable pattern of the collective behavior of the players can be considered as one of the important aspects of soccer expertise.

Considerations for functional 4 v 2 possession football game

Masao Nakayam

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ABSTRACT

Scoring goals is a key aspect of football (Football Association) as an invasion game that will enable teams to win matches. To be on the offensive and to score goals, the attacking team must attempt to keep possession of the ball while making territorial gains into the opponent's goal area. Therefore, it is an important skill for football players to be able to make successful passes among teammates while maintaining ball possession. There are two possible considerations that need to be accounted for to effectively maintain possession whilst making progress towards the opponent's goal. Notably, one would need to consider the interaction between the action of the passer and the action of the receiver. The quality of a pass is determined by the "weight," "direction," and "timing" of the pass. In addition, the effectiveness of the action of the receiver is determined by "distance," "angle," and "timing" of the passes. Undoubtedly, the above features of the type of passes demonstrated will also be greatly influenced by the action of the opponent who is trying to gain control of the ball. Critically, each player must choose the best play while constantly recognizing and predicting the position, direction and

KEYWORDS

Football Match; Team Coordination; Expertise

speed of movement, and even the opponent's intention. One of the training drills to improve passing and keeping ball possession is the 4 v 2 possession game. Through this modified game, players will be able to become more attuned to the actions of their teammates and potential opponents, which is necessary to support effective ball possession in a real game context. From this modified game, the players could possibly explore movement and passing opportunities that will lead to more successful play behaviours. However, in this modified game, the direction of the attack, which is one of the key elements of football as an invasion game does not feature prominently. It is acknowledged that the factor of the direction of attack is also a constraint on the performance of passing and it will impact players' behaviours differently in the actual game of football. While the 4 v 2 possession game can provide many opportunities to acquire and adapt affordances for the offensive team, there are also limitations to what the game can offer. In this presentation, we explore some of the key considerations that will impact the effectiveness and limitations of the 4 v 2 possession game.

Flexibility, stability, and adaptability of team play as key determinants of within-season team performance in football

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ABSTRACT

Introduction: In football, in order to increase their chances of winning, teams set specific playing styles during matches in order to counter the opponent teams and eventually win. The aim of this paper was to profile team playing styles based on match actions in games and to assess whether i) the playing styles themselves, ii) the flexibility of the styles exhibited by a team or iii) the adaptability of the styles of a team are predictors or higher performance. **Method:** Cluster analysis was utilized to determine the playing styles of the teams, based on 31 match events (e.g., tackles, shots on target, touches) performed by teams in each match in the five European leagues during the last 6 seasons. The playing style of the team was therefore labelled for each game. To evaluate the playing style flexibility of teams, the variance of the playstyles utilized throughout each season by a team was assessed through the coefficient of unalikeability (i.e., variance for categorical data), regardless the opponent team's style (i.e., quantifying how diverse can be the style of a specific team). To measure the adaptability of a team, the variance in the pairs of style was measured (i.e., linking the styles of both teams in the game) in order to quantify whether a team usually uses the same style against a similar style from the opponent. To assess if flexibility and adaptability are key for success, Pearson's correlations were used between the amount of flexibility and the match outcomes and the amount of adaptability and the match outcomes (i.e. match outcomes where goals scores and

KEYWORDS

Football; Behavioral Variability; Notational Analysis; Machine Learning; Big Data

number of shots taken within the penalty box). Results: Globally, 8 different playing styles emerged from the clustering. Both the measure of flexibility and the measure of adaptability were positively associated with the number of shots within the penalty box (for flexibility: all p s $< .001$, $r = .41$ with goals scored and $r = .43$ with shots within the penalty box / for adaptability: all p s $< .001$, $r = .50$ with goals scored and $r = .43$). Discussion: More than the styles themselves, football team performance is related to the flexibility or diversity of the different styles a team can show during a season. This flexibility forms the basis to the adaptability capacity. Indeed, it seems that having the opportunity to constantly propose the “best match” in facing a specific style is a key factor for performance.

The ecological approach to perception and action in daily activities and sports

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ABSTRACT

In this symposium, the presenters will talk about empirical studies around the theme of perception and action in daily activities and sports based on Gibson’s ecological approach. The approach emphasizes the relationship between individuals and their surrounding environment. This symposium focuses on using the approach to investigate postural control in shooting, perceptual learning and motor learning in rhythm task, action-specific perception in swimming and tennis, the influences of writing and cognition load on postural control and motion sickness, and the influences of body load on postural control and motion sickness.

Air pistol shooting performance and body sway in aiming: examining on experience and practice

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ABSTRACT

Strong relationship has been found between posture control and shooting performance in air pistol. Body sway is the external indicator of posture control mechanisms. In this study, experience and practice of shooting were manipulated to figure out the effects on shooting performance and body sway. In experiment 1, twelve elite shooters and unskilled adults were requested to

KEYWORDS

posture control; handedness; experts; novice

shoot 30 shots, 15 shots for both dominant and non-dominant hands. Body sway and hand movement data during aiming process and the shooting scores were analyzed by 2 (experience) x 2 (shooting hand) mixed-design two-way ANOVAs. Experiment 2 was designed to examine the shooting training effect on posture control, twenty-four right-handers and twenty-four left-handers who were not experts in shooting were recruited and randomly assigned to the groups of dominant hand training and non-dominant hand training with (1) right-handers practice with right hand (RR), (2) right-handers practice with left hand (RL), (3) left-handers practice with right hand (LR), and (4) left-handers practice with left hand (LL). All participants attended shooting training program for 4 weeks, twice a week. Before and after the training period, pre-test and post-test were conducted. Shooting scores, the variability of the body sway and hand movement data during aiming were measured and analyzed by 4 (group) x 2 (shooting hand) x 2 (pre- and post-test) mixed-designed three-way ANOVAs. The results showed that experts had more stable control of the body and hand than the novices and had better shooting performance. Besides, the less movement amplitude in z-axis of the shooting hand, the better performance could be achieved, no matter which hand was used. However, such phenomenon was found in novices only. In experiment 2, after a period of practice, all the participants improved in their shooting performance. The better shooting performance was achieved in post-test (compared with pre-test) and in the dominant hand conditions (compared with non-dominant hand conditions). Nonetheless, results demonstrated that only few variables for the control of posture and hand movement increased the stability. Thus, it's speculated that some potential factors influenced the shooting performance.

The effect of exposure timing, exploratory mode, and task difficulty on rhythmic motor performance

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ABSTRACT

Introduction: Ecological psychology emphasizes the mutual relations between individuals and their environment. While individuals are exposed to the environment, they can perceive the specific relationship between them and their environment, and produce an adaptive behavior through exploration. As well as perception-action coupling illuminates that individuals' perception and action are interdependent in the environmental context. Also, the task difficulty may bring individuals generating different behaviors. **Purpose:** Based on the concept of perceptual learning and motor learning, this study aims to examine how exposure timing, exploratory mode, and task difficulty affected individuals' step performances in the rhythm task. We desire to

KEYWORDS

Ecological psychology;
perception and action;
movement variability

provide more comprehensive information on motor behavior and apply the results to another sport situation. Method: We recruited 60 adults as participants to play the dance dance revolution (DDR) with 120bpm. They were assigned randomly to the pre-exposure action group, pre-exposure inaction group, re-exposure action group, re-exposure inaction group, and control group. Participants explored the environment in two modes. First, participants observed the image on the screen and pressed the button to cope with the task. Second, participants only observed the image on the screen. Four levels of task difficulty were classified according to the signs passing through the target zoom in 2 minutes. We used six infrared ray cameras to collect kinematic parameters and analyzed the timing accuracy, movement variability, and degree of progress on the rhythmic motor performance. Results: (1) As participants performed a relatively good outcome, the button pressing exploration caused them to act better timing accuracy than the observing exploration. (2) When participants were exposed to the game situation, the observing exploration and button pressing exploration resulted in higher movement variability. (3) The task difficulty from high to low caused a greater degree of progress comparing to the task difficulty from low to high. Conclusion: While individuals execute better performance, the acting exploration makes them perceive more information to enhance timing accuracy. Furthermore, individuals yield adaptive step performances as they are exposed to game context and conduct exploratory activities. Finally, because of the warm-up decrement and psychological effect, the task difficulty from high to low brings in greater degrees of progress.

Action-specific effect on distance and speed perception in sports

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ABSTRACT

Action-specific effect on perception were confirmed by studies in varying contexts. Performer's perception is influenced by their own ability to perform the task. Softball player with better performance perceived larger ball size, targets under water were perceived closer by swimmer with better ability. Two original studies were conducted to examined action-specific perception in sports. In the swimming study, effects of difference and changes in swimming ability on distance perception were investigated. Seventy-four students in college PE class were recruited as participants. According to participants' swimming ability, they were arranged in four groups: 0 meter, under 10 meters, 11 to 24 meters, and over than 25 meters. They judged targets distance on water surface before and after swimming courses. The results showed no difference between distance perception among people with different swimming ability. Furthermore, distance

KEYWORDS

swimming; tennis; action-specific perception

perception did not change while swimming ability improved after swimming course. Perception of distance on water surface is not influenced by difference and change of swimming ability. In the second study, effects of performance, task difficulty, and stroke type on ball speed perception were examined. Nineteen college tennis players served as participants. They returned tennis ball which served in different speed with forehand and backhand stroke to large and small target zone. Judgment of served ball speed were made after return performance. The result showed no difference in ball speed judgment when ball returned "in" compared to "fault". Judgment of ball speed is not different between small and large size target, nor between forehand and backhand stroke. Ball speed perception is not influenced by performance, task difficulty, and stroke type. These sports studies showed opposite results to action-specific perception perspective.

Posture adaptation induced by manipulating mobile device under imitated transportation conditions: examining the effects of coordinative structure and cognition load

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ABSTRACT

Introduction: Keeping balance in a dynamic environment or increasing load to supra-postural tasks may induce posture instability and even motion sickness. Mobile devices have become more popular nowadays. People use smartphones almost everywhere. It's doubtful if people experienced motion sickness more often while they manipulated mobile devices in transportation conditions. **Purpose:** This study aimed to examine the posture control and motion sickness while individuals used the handwriting input to perform various tasks with a smartphone under the imitated transportation conditions. **Methods:** A moveable wooden plane was attached with a moving room. Participants were requested to stand on the plane to perform the specific writing tasks. The Simulator Sickness Questionnaire (SSQ) before and after the intervention. The position data of the specific segments were collected by the magnetic tracking system during the trials to calculate the postural sway variability and the cross-correlation coefficients among the target segments. In experiment 1, twelve participants had to keep balance and wrote with their hands separately under dynamic carriage simulations. In experiment 2, forty-eight participants were randomly assigned into four groups that were constructed by writing hands and two levels of cognition load to perform the cursive-writing copying tasks. **Results:** In experiment 1, writing hand influenced the body sway amplitude in ML axis. Besides, participants performed with higher head-body cross-correlation coefficient in supra-postural tasks than balance task in

KEYWORDS

Ecological psychology; postural instability theory; supra-postural task; moving room

AP axis. In experiment 2, three-way ANOVA interactions were found in head-body coupling in AP axis and head-mobile device coupling in ML axis. Conclusion: Writing hand and cognition load were not the main reason that caused motion sickness. However, these factors affected the control of various segments. Few differences were found in posture control between people who experienced motion sickness and those who did not.

The effects of body loads on postural control and motion sickness in a virtual reality head-mounted display

Chih-Hui Chang

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ABSTRACT

Motion sickness is one of the major issues in the application of a virtual reality head-mounted display (HMD) which is widely used in education, military training, rehabilitation, entertainments, etc. The present study altered the individuals' mechanical properties by applying external loads on the different body position, and investigated the effects of the loads on their postural control and its relation to motion sickness. Eighty healthy young female adults were recruited as participants and were randomly assigned to the shoulder loads (SL), the waist loads (WL), the leg loads (LL), and the no loads (NL) groups. Participants were required to stand and perform a one-minute visual inspection task before wearing the body loads. Then, they performed a one-minute visual inspection task and a one-minute visual search task under four different body load conditions. They were then required to wear a virtual reality HMD (HTC VIVE) and played a car racing game (Project CARS 2) for up to 15 minutes. Force plate (AMTI AccuSway Optimized) was used to record the participants' displacement of their center of pressure (COP) before and during exposure to the HMD at 60 Hz. The incidence of motion sickness was determined by a forced choice, yes/no statement. Results indicated that the average incidence of motion sickness was 43.75 %, and the rate did not differ between the four groups, $p > .05$. At pre-exposure, in the mediolateral (ML) axis, the postural variability was greater after the individuals wore loads as compared to before the loads. In the anteroposterior (AP) axis, the postural variability was greater while the individuals performed an inspection task as compared to a search task. During exposure, the Motion Sickness \times Weight \times Time mixed design 3-way ANOVA showed that in both the AP and ML axes, the Weight by Time interaction effect was significant. Post-hoc analysis showed that with the increased exposure time, the SL group exhibited increased postural variability while the LL group decreased, and the WL and NL groups remained constant. In the ML axis, the Motion Sickness by Time interaction effect was significant. In conclusion, the body loads did not affect the incidence of motion sickness. With time, the individuals with different external load conditions exhibited distinct postural

KEYWORDS

motion sickness; body loads; virtual reality; head-mounted display; postural control

control and the sick and well individuals also showed distinct postural control. The results will be discussed from the postural instability theory of motion sickness.

Oral Presentation

Impact of Perceptual-Cognitive Training (PCT) on perceived satisfaction in sports performance among elite sports persons.

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ABSTRACT

The objective of the study was to investigate whether training programs aimed at improving athletes' perceptual-cognitive skills meet such claims. To address the above objective hypotheses were formed and tested by means of appropriate statistical applications. The current study examines if a perceptual-cognitive training program, such as the Neurotracker multiple object tracking (MOT) device, has the potential to improve elite athletes' performances in dynamic sports. Sixty elite athletes from various games and sports were the participants in the present study. All the subjects were randomly chosen from a pool of elite athletes. Subjects were from boxing, wrestling, handball, football, Cricket, Volleyball, Basketball, hockey, badminton and tennis. The sample had a mean age of 22 years (ranging from 17 to 25 years). Information about the study along with the required instructions were given to the athletes' coaches and coaching staff. Thereafter, athletes were given various testing items, which included questions covering demographic information such as age, gender and type of sport. Further, Athletes' Satisfaction Questionnaire (ASQ- A questionnaire measuring performance satisfaction) was included. This measurement tool (ASQ), proven to hold satisfactory validity and reliability. Subjects were unfamiliar with the training tool to control training effects confounds. Subjects were asked to perform at least 4 sessions in a week for 5 weeks. After completion, they were subjected to perceptual-cognitive training, a post test (ASQ) was conducted for all the subjects. The study found a significant training effect on specific training measures such as the Neurotracker baseline scores and indicated a training impact on subjective performance when initial baseline and targets were controlled for. The results show that the NT baseline scores and sports performance improved significantly during the experiment. The results are discussed in line with the current research along with its implications and possible future research.

KEYWORDS

Perception; Cognition; Athletes Satisfaction; Perceptual Cognitive Training; Neurotracker

The future of sport and exercise psychology in nigeria beyond the pandemic era

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ABSTRACT

The corona-virus disease (covid-19) which was declared by WHO as a global pandemic also affected Nigeria. The first recorded case was on February 27, 2020 by a foreigner. Apart from health and economic crises the pandemic has brought to the country, it also affected the mental and psychosocial health of the victims and the non-affected persons. Moreover, it resulted to depression, fear and suicidal tendencies in the society. In addition, various sporting activities across the country were adversely affected too. Hence, this paper discusses the psychological impact of the pandemic on sports men and women in Nigeria. Also suggestions and recommendations on how to still carry on sporting activities amidst post covid era challenges were proffered. There should be a post-Covid19 counseling centre across all the electoral wards in the country. Anytime lockdown is declared in the country, psychological services should be rendered to the populace to avert fear and anxiety. Mental health and counseling services should be rendered to the frontline health workers too to assist in educating the populace. And lastly there should also be a psycho-education for preventive and control measures through face to face interaction, electronic, mass and through the social media. Empirical review on various studies by researchers on the psychological impact of the pandemic on athletes and sporting activities were also reviewed. In conclusion, the lockdown has been suspended and various economic, academic and sporting activities are beginning to be now carried out in Nigeria but with the regulation of covid19 protocol. There is also the need to abide to the preventive measures stipulated by Nigeria Center for Disease Control (NCDC) such as social distancing, wearing of mask, sanitizing and the various precautionary measures published by World Health Organization (WHO).

KEYWORDS

Pandemic; Psychological services; Psycho education

Stress in indonesian elite female basketball athlete

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ABSTRACT

Elite female basketball athletes have many challenges. Professional female athletes are required to have a better and more stable performance during long-term competitions. Indonesian elite female basketball athletes have pressures and demands which can be stressors. Female athletes have a greater risk than males for triad syndrome as a result of high intensive sport activity. The

KEYWORDS

Stress; Female Basketball Athlete; Indonesian Athlete

differences between the female's and men's basketball competitions can be due to several things. Deaner, Balish, and Lombardo (2016) mentioned several aspects that differentiate female's and men's participation in sports. Male and female athletes are generally different in motivation, especially their competitiveness and risk-taking. This difference affects the ability, skill, and quality of matches of male and female athletes. The aim of this study is to examine stress experience and stressors in Indonesian elite female basketball athletes. This study used a qualitative method, and data was collected through interviews. The analysis technique used thematic analysis. Participants in this study were 4 Indonesian professional female basketball athletes. The inclusion criteria of the participants were Female in age 17-35 year, actively involved as a basketball athlete, incorporated in a professional basketball club, having high-stress level. To get participants to meet the criteria, athletes at the club were given Perceived Stress Scale (PSS-10) to determine their stress. The result shows that all participants experienced stress. The source of stress in Indonesian elite female basketball athletes are a double burden, sports pressure, and sports conditions. Women's social construct in Indonesia contributes to being the source of stress on elite female basketball athletes. This social construct arises as a social pressure on women athletes in conflict with their social roles

Communication and emotion expressivity among parents and youth athletes: self-report and video observation of interpersonal behaviours

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ABSTRACT

The ways in which parents communicate and express their own emotions may influence the way that their children communicate and learn to express emotions when communicating about sport-related experiences. The purposes of this study were to examine communication and emotional expressivity between youth athletes and their parents, and to explore the association between athlete outcomes and observed communication behaviours among parents and athletes during the car ride to and from sporting events. Thirty-four dyads of parents and youth athletes were recruited to video-record their car ride to and from training and competitions for a two-week period. Participants also completed a measure of parent pressure from the Sport Multidimensional Perfectionism Scale-2 (Gotwals & Dunn, 2009), the Child-Parent Communication Apprehension Scale for Young Adults (Lucchetti et al., 2002), the Perception of Success Questionnaire (Roberts et al., 1998), the Berkeley Emotional Expressivity Questionnaire (Gross & John, 1997), and the Interpersonal Regulation Questionnaire (Williams et al., 2018).

KEYWORDS

Youth Sport;
Communication; Emotion
Expressivity; Interpersonal
Behaviours; Parent-Athlete

After screening the videos, 98 videos (from 28 dyads) of interactions between parents and children were analyzed using Observer XT software. Correlation analysis of the survey data from all 34 dyads illustrates that parent-reported autonomy support was positively related to athletes' emotional expressivity for negative ($r = .59$, $p < .001$) and positive ($r = .43$, $p < .01$) emotions. Furthermore, athletes' communication apprehension was negatively associated with their tendency to interpersonally regulate negative emotions ($r = -.37$, $p < .05$). Parents' positive emotion expressivity was also positively associated with athletes' emotional expressivity ($r = .34$, $p < .05$). Further correlation analysis of athletes' surveys from the 28 dyads with coded videos suggests that athletes' perceptions of a task-oriented motivational climate were positively associated with the duration of silence in the car ride videos ($r = .46$, $p < .05$). In addition, athletes' inferences about their parents' perceptions of their sport ability were negatively associated with the frequency of praise ($r = -.37$, $p < .05$) and the frequency of criticism ($r = -.37$, $p < .05$) in their sport-related conversations with parents. These findings indicate that communication between parents and athletes is related to parents' own emotional expressivity, and athletes' communication apprehension is associated with their likelihood to express negative emotions to their parents. This study contributed to the literature by highlighting the importance of considering the car ride as a context within which sport-related communication between parent and athletes can occur and impact athletes' experiences.

Understanding performance enhancement behavior under a goal system theory perspective

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ABSTRACT

Chemically assisted performance enhancement (CAPE) represents a new societal trend. CAPE has inflicted several life domains such as sport, exercise, work and studentship. The past years several studies have attempted to investigate the psychosocial processes influencing the decision to use CAPE substances. In this respect, past evidence has largely focused on identifying the determinants of relevant intentions. Still, theorists have advocated that CAPE behaviors serve as means to achieve higher order goal rather than being the outcome behavior. Goal system theory provides a theoretical framework that may explain the reasons for engaging in CAPE behaviors. This is a motivational cognitive approach suggesting that goal systems comprise mental networks in which goals are cognitively linked to means of attainment. According to the theory, means are linked to a particular goal; e.g., CAPE behaviors are used to help an individual achieve his/her ultimate goal. Furthermore, means are also connected with other means; CAPE behaviors help people improve their performance, which is an essential mean to achieve

KEYWORDS

doping; neuroenhancement; intentions

their ultimate goal. The present study was designed to preliminary test this theory by assuming that CAPE behaviors differ based on individuals' aspirations. The proposed hypothesis was tested in four life domains, sport, exercise, work and studentship. The study consisted of 254 individuals with a mean age of 28.92 years (SD = 10.85, 64 competitive athletes, 40 exercisers, 83 professionals, and 67 students). Participants completed a survey measuring how important is to achieve seven aspirations [responses ranged from 1 (not at all) to 7 (very much)], six items measuring willingness towards CAPE behaviors [responses were anchored on a 7-point scale ranging from to) and self-reported CAPE behavior [from 1 (never) to 4 (systematically)]. The results of the cluster analysis indicated that participants were classified into those pursuing autonomous (i.e., pursue of personal development, friendship and health) and those pursuing controlling (i.e., pursue of money, fame, important role in the society, and attractive appearance) aspirations. The results of an independent samples t-test revealed that participants pursuing controlling aspirations reported higher likelihood to engage in CAPE behaviors. A marginally non-significant difference emerged for actual CAPE behavior. The findings of the present study demonstrate that CAPE behaviors are linked with higher order goals such as money, fame and recognition by the community. This evidence signifies an important process that allows a more comprehensive understanding of the role of CAPE behaviors.

A qualitative analysis of athletes' beliefs about values and doping in sport

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ABSTRACT

Research has shown that values are strong predictors of behavior and different structures of values may serve as protective or risk factors for aggression and anti-social and risky behaviors. In the context of sport, values have been shown to influence prosocial and anti-social attitudes, cheating behavior and doping likelihood. Nevertheless, evidence on the association of values with doping is rather scarce and more research is needed in order to identify the specific values that affect doping related behaviors. For this purpose, the present study was set put to gather qualitative evidence about athletes' views on the relationship between values and doping, as well as for the identification of the values that are linked to attitudes towards doping. Participants were 10 elite competitive athletes (8 males, 2 females) from both individual (track and field, taekwondo, archery) and team (basketball, football, handball) sports. All athletes were participating in the national teams of their respective sport. Two semi-structured interview were conducted with five athletes each. The interviews were performed online due to the COVID-19 restrictions. The interview guide included

KEYWORDS

values; morality; ethics; performance enhancement

questions about the values that athletes consider important in their life and sport involvement, and how these values might relate to doping. The interviews were audio recorded and verbatim transcribed. A content analysis was performed indicating that the values that emerged as the most significant were discipline, persistence, patience and respect for the opponent. In addition, participants reported that the values that are cultivated at an early age are better established in the athlete's mentality and are followed throughout his/her sporting career. The athletes advocated that these values may serve as protective factors against doping. Moreover, participants suggested that athletes not endorsing the above mentioned values are more susceptible to doping. Lastly, athletes who are easily affected by other and do not hold a strong personality were perceived as more vulnerable and more at risk for engaging in doping. The results of the study provided an insight into athletes' opinions about the relationship between values and doping. These findings could contribute to the design of effective values-based anti-doping educational interventions assisting young athletes developing a doping-free mindset.

Grasping phenomenological psychology of martial arts and combat sports

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ABSTRACT

Strict psychology of Martial Arts and Combat Sports (MA&CS) is yet to be developed. Scientific production that relates psychology and MA&CS commonly shows psychological outcomes of the practices using the constructs and instruments of psychology. The objectivity of these psychological constructs is not sensitive to the specificity of the psychic experience lived in combat modalities. On the other hand, qualitative investigations are stuck to situational singularities examined, compromising their results with a scope not theoretically generalizable. Terminological and conceptual chaos prevails in the field of MA&CS constituting a challenge to detect a unit of these specificities. Furthermore, no other sport modalities are so close to violence as combat sports, making psychics specificities a central problem in psychology. Classical phenomenology allows looking for these specificities through an essential description of combat practices as experiences reduced to their intentional structures. Until its ultimate consequences, phenomenological reduction reaches the elements without which the phenomena in question would no longer exist. Once we have already carried out this phenomenological investigation, its results led to the formulation of TCCP and TMAP, Theories of Corporal Combat Phenomenon, and Martial Arts Phenomenon. These theories consider the nature of the body-to-body combat experience to designate the intentional and psychological correlations that differentiate the combative forms as corporal

KEYWORDS

Martial Arts and Combat Sports (MA&CS); Phenomenological Psychology; Violence

fight, physical struggle (street fight), duel, play-fights (ludic), self-defense, and instrumental offensive combat. Empirical-phenomenological research in psychology allows understanding the decisive role in the routine of institutionalized practice played by corporal fight, physical struggle (street fight), and play-fight (ludic). In contrast, except as imagination or inadvertently, the other forms are foreign to daily practice. This work aims to identify and understand, through comparing results of a set of studies similar in its objectives and methods, the psychological dynamics inherent to the combat practices. The method is comparative and facilitated by contrasting results of phenomenological research with Capoeira, Jiu-Jitsu, Wrestling, Muay-Thai, Karate, MMA, which had the same purpose: to investigate the psychological boundaries and transitions between corporal fight, violence (struggle), and play-fight. This new phenomenological result describes the psychological balance of corporal fight as intersubjective tension. The vulnerability of combative exposure oscillates dynamically between the poles of hostility and condescending. Falling into violence or falling into a play-fight are possibilities usually correlated with the fighting intensity and determine the main threats to the ability to fight. In all MA&CS, that psychological dynamism seems to be central to the subject's development as fighters.

The development of an evidence-based safe sport playbook for coaches

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ABSTRACT

As concerns of athlete welfare in sport, including physical, psychological/emotional, and sexual harms as well as neglect and discrimination continue to emerge through research and media outlets, it is becoming increasingly apparent that coaches require additional knowledge and skills to prevent and address harms in sport, and to develop optimal experiences for all (Kerr et al., 2020; Lang, 2020). These realities have given rise to the Safe Sport movement, which at its core emphasizes the need to move from a focus on prevention of harms to a focus on optimizing the sport experience for all participants including athletes, coaches, sport administrators, officials, support staff, and others in the sport environment (Kerr et al., 2020; Safe Sport International, 2019; US Center for SafeSport, 2020). In Canada specifically, Safe Sport initiatives include the Universal Code of Conduct to Prevent and Address Maltreatment in Sport (UCCMS) and Safe Sport educational modules (e.g., CAC Safe Sport Training, Respect in Sport). These initiatives fulfill the important need of informing the community about harmful conduct such as psychologically or sexually abusive behaviours and their implications for physical, psychological/emotional, and social development. While it's important to know 'what not to do', it is equally important to

KEYWORDS

Safe Sport; Coaches; Best Practices; Knowledge Translation

know 'what to do.' For example, coaches will often say "I understand that I can't do XX anymore, but what do I replace it with?" or "If I can't use these methods, what do I use instead?" The next step in advancing Safe Sport is to help the community with direction, advice and support to coaches with clear indicators of 'best practices' and concrete, actionable strategies to provide optimal experiences for all. Through the following presentation, content from a practical guide entitled "The Safe Sport Playbook" will be discussed. The Safe Sport Playbook is an empirically grounded, theoretically informed, and user-friendly source for coaches, which provides concrete strategies and best practices to achieve Safe Sport on topics which include but are not limited to using power positively, establishing healthy relationships with athletes, replacing punishment with discipline, and building positive team dynamics. Only when the sport community is adequately educated on Safe Sport and primed with the necessary knowledge and skills of how to promote Safe Sport, will an inclusive, welcoming, accessible, mentally healthy, rights-based space for all participants be created.

Sleeping behaviours in adolescent athletes and their non-athletes counterparts

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ABSTRACT

Evidence indicates that most adolescents and young athletes attain insufficient sleep. This is problematic because maladaptive sleep behaviours can have drastic repercussions on mood and general health and well-being and may lead to higher injury risks as well as poorer cognitive, academic and sport performance. A limitation of many studies on youth sport athletes is that they do not measure matched controls, nor do they examine whether actual sleep behaviours match with perceived ideal sleep behaviours. In response to this, the present study examined how the sleeping habits of young elite athletes relate to those of their non-athlete counterparts, and how these compare to their perceived ideal sleep behaviours. One hundred and fifty-one adolescents (male, female, other) aged 14-21 years (17.2 ± 2.1 y) completed an online survey ($n_a = 58$ athletes; $n_c = 93$ controls). Participants were assigned to the athlete group if they participated in dance for 20 or more hours per week or if they competed in one or more sports at a state level or above. Athletes participated in a variety of sports including athletics, rock climbing, basketball, swimming, volleyball, rugby union and dance. The survey collected demographic information regarding sport and/or dance participation, competition levels, and sleep behaviour data, such as sleep latency and daily bedtime and awake-time. Findings indicated that nightly sleep duration did not differ between athletes ($8.19 \pm .9$ h) and their non-athlete counterparts (8.13 ± 1.01 h) ($t_{138} = 0.33$; $P = .74$; Cohen's $d = 0.06$),

KEYWORDS

Sleep duration; adolescents athlete; adolescents

nor did sleep latency (athletes = 31.4 ± 16.35 ; control = 27.58 ± 15.34 min; $t_{141} = 1.396$, $P = 0.064$, Cohen's $d = 0.239$). In addition, no differences in discrepancy between reported and ideal sleep duration were found between the two groups (athletes = 27.58 ± 15.34 min; controls = 31.40 ± 16.38 min; $t_{138} = 0.20$; $P = .84$; Cohen's $d = .03$). Correlational analysis indicated that there was only a small association between reported and ideal nightly sleeping hours for both athletes ($r = .24$; $P = .09$) and controls ($r = .12$; $P = .31$). Nonetheless, half of the controls (50.6%) and 41.8% of the athletes reported obtaining less than 8 hours of nightly sleep suggesting that maladaptive sleep behaviour in both youth sport and adolescent populations remain common. Our findings suggest that adolescent athletes and their non-athlete counterparts have similar sleep behaviours. Moreover, neither population appears to attain as many hours of sleep as they think they should.

Personality traits and psychobiosocial states among athletes: the mediating role of dispositional mindfulness

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ABSTRACT

Research evidence shows the benefits of mindfulness on performance and well-being in athletes. However, the relationship between athletes' personality traits, dispositional mindfulness, and psychobiosocial states has not been investigated so far. Therefore, the purpose of our study was to ascertain if dispositional mindfulness could mediate the relationship between athletes' personality traits and functional/dysfunctional psychobiosocial states associated with performance. Italian athletes ($N = 221$, 50% female, $M_{age} = 29.29 \pm 9.55$) involved in individual ($n = 124$) or team sports ($n = 97$) completed questionnaires assessing personality traits (i.e., conscientiousness and emotional stability from the Ten Item Personality Inventory; TIPI), dispositional mindfulness (i.e., awareness and refocusing subscales from the Mindfulness Inventory for Sport Scale; MIS), and psychobiosocial states (i.e., functional states associated with optimal performance and dysfunctional states associated with not optimal performance; PBS). Confirmatory factor analysis (CFA) was performed to examine the factorial validity of the measures. Path analysis was conducted to test the mediation effects of mindfulness on the relationship between personality traits and psychobiosocial states using maximum likelihood estimator (ML) and bias-corrected bootstrap method based on 5000 resamples. Gender and sport types were entered as covariates in the model. CFA supported the factor structure of the MIS scale, $CFI = .968$, $TLI = .958$, $RMSEA$ (90% CI) = $.064$ ($.040 - .088$), and $SRMR = .052$, and the PBS scale, $CFI = .954$, $TLI = .945$, $RMSEA$ (90% CI) = $.057$ ($.041 - .072$), and $SRMR = .057$. In line with theoretical expectations, path analysis revealed significant direct effect of conscientiousness ($\beta = -.133$, 95% CI = $-.255$ to $-.014$) and

KEYWORDS

conscientiousness;
emotional stability;
awareness; refocusing; sport
performance

emotional stability ($\beta = -.276$, 95% CI = $-.382$ to $-.169$) on dysfunctional psychobiosocial states. A significant indirect effect was found between conscientiousness and functional psychobiosocial states via awareness ($\beta = .054$, 95% CI = $.022$ to $.101$) and refocusing ($\beta = .084$, 95% CI = $.042$ to $.138$). A significant indirect effect was also observed between emotional stability and functional states via refocusing ($\beta = .104$, 95% CI = $.061$ to $.161$). Overall, findings suggest that conscientious and emotionally stable athletes, who also exhibit a higher level of dispositional mindfulness, experience higher levels of psychobiosocial states functional for performance. Future research should examine whether psychological interventions aimed at improving mindful awareness could enhance psychobiosocial states and performance.

Talent, passion, or hard work? – A person-oriented study on the role of psychological factors in elite youth soccer

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ABSTRACT

Identifying and developing youth soccer players with the highest probability of a successful career is one of the key topics in elite soccer and recent research (Baker et al., 2019; Williams et al., 2020). According to current knowledge, long-term predictions for most performance indicators are not very promising/reliable (Conzelmann et al., 2018; Güllich, 2013). Therefore, psychological factors receive increasing attention as potential performance predictors (Hill, 2018). Based on a holistic understanding of talent, the present study will first determine potential psychological factors predicting (coach-rated) overall soccer skill to subsequently identify psychological profiles of elite youth soccer players in a person-oriented approach (Bergman et al., 2003) and investigate whether certain profiles are related to higher/lower soccer skill. The present study is part of a two-year longitudinal study in a German youth soccer academy with players from under 14 to under 21 teams (age: $M = 16.49$, $SD = 3.19$ years). Questionnaires were used to assess constructs of personality, motivation, self-efficacy, stress coping, self-regulation, and mental skills, completed by a computer-based test of executive functions. A multidimensional rating of soccer skill by two team coaches represents the performance criteria. Exploratory multiple regression analysis was used to identify the major factors explaining significant amounts of the variance in the criteria. The resulting factors were used for LICUR clustering (Bergman et al., 2003) to identify player profiles. Finally, soccer skill was compared between the resulting player profiles using one-way analyses of variances. Psychological factors explained 25.1% of the total variance in soccer skill ($F(29,121) = 5.36$, $p < .001$, $f^2 = .34$). Factors that contributed unique portions of variance (with $p < .10$) were selected for further analyses. The obtained nine factors represented personality-based (3), motivational (3), and skill-

KEYWORDS

talent development; talent identification; elite youth soccer; person-oriented approach; psychological factors

based variables (3). The final cluster analysis of the LICUR method explained 43.2% of the sum of squared errors. The six resulting player profiles differed significantly in soccer skill ($F(5,110) = 2.916$, $p = .016$, $\eta^2 = .117$, $n = 116$). In summary, the present results provide evidence that psychological factors as a whole influence youth academy players' soccer skill. The identified psychological factors and profiles range from rather innate personality traits (talent) to situational, motivational factors (passion) to highly variable skills (hard work). In future studies, these findings have to be replicated in different settings and need to be analyzed for individual and structural stability as well as predictive value for performance and talent development.

Planning life outside of sport: are resources in place really accessible for athletes? how an economic theory of social justice can help understand athletes' capability to find one's path

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ABSTRACT

In an effort to help individuals, it is not enough to simply make resources available. Despite the results showing that planning the transition out of sport is associated with more positive emotional responses, fewer emotional difficulties in retirement, a shorter post-retirement transition period and greater life satisfaction (Alfermann, Stambulova, & Zemaityte, 2004), career support services available through the national program in Canada are used by only 36% of elite athletes (Game Plan, 2019). The purpose of this qualitative research is to characterize usage of career support resources of elite athletes in terms of their capability to plan their life outside of sport, based on the Capability approach developed by the economist Amartya Sen (1985). The Capability approach enables providers to understand what is accessible in principle and what is really accessible to individuals according to the context in which they live. According to Sen (1985), the resources available to individuals are not good indicators of what people are actually capable of doing or being since they differ in what they can do with the same resource. Qualitative interviews were conducted with 14 athletes. The findings from this research suggest that multiple factors (personal, social and environmental) act as a barrier to the use of the services available. Amongst these factors, the fear of being considered weak, the feeling that they don't have any other options in life and a lack of knowledge of the possibilities accessible to them. The majority of athletes suggested to develop a formal integration of the services into the sport development planning. Just like time is often set up in the athlete's schedule to see medical professionals, academic and career planning could be

KEYWORDS

Sport transition; career support; elite athletes; well being

considered part of the athlete's sport development plan. This strategy would also help reduce the fear of stigma by showing athletes that their team endorses seeking help. The findings of this study have important implications for professionals helping athletes planning their career outside of sport, program administrators and the development of career counseling programs for elite athletes. This also offers opportunities for new interventions in career guidance counselling towards athletes as well as new angle of research on the factors influencing help-seeking behaviors towards career guidance services.

The effect of mental performance training (via instructional rounds) on umpires' self-efficacy to perform

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ABSTRACT

Introduction: Mental performance training (MPT) is known to help athletes achieve peak performance through a variety of ways (self-talk, focus, confidence) (Bell & Hardy, 2009; Hatzigeorgiadis et al., 2009). But what about game officials? Conceptual models of self-efficacy (SE) for officials have been explored (Guillen & Feltz, 2011), but evidence of how MPT could benefit officials is lacking. Using Bandura's SE model (1977), researchers have hypothesized that referees with high occupational SE should improve speed and accuracy of decisions, receive higher satisfaction marks, and experience less occupational stress (Hepler & Chase, 2008, Tenenbaum et al., 1996). Instructional rounds (IR) are an education professional development approach to enable work within a community to identify and address issues of practice (City et al., 2009; Roegman & Riehl, 2012). IR engages peer groups in iterative, structured feedback cycles toward long term improvement by using collective behavior/action observation, group debriefs of improvement strategies, and commitments to change. Although newer in the PD field, IR research is showing promising findings for lasting change in practice (City, 2011; Marzano, 2011). **Purpose:** The purpose of this study was to explore the effect of MPT on umpires' SE to perform and explore the utility of the IR method. **Methods:** Collegiate softball umpires (n = 137) received MPT either through one-time workshops (n = 50; off-season) or IR (n = 50; during season). Umpires completed a survey on SE after pre-post MPT. A control group (n = 37) completed surveys pre-post season and received no formalized MPT. Workshop MPT was pre-determined and targeted basic mental training. IR MPT was varied and selected by each group per the IR process. SE was measured across five domains (overall, occupational, ability to regroup, resilience, and control distressing thoughts). **Results:** ANOVA revealed all groups were similar in most SE domains to start (workshop umpires were lower in occupational SE than others). After MPT, IR umpires significantly improved in occupational SE and SE to control

KEYWORDS

Umpires; Mental Performance Training; Instructional Rounds; Self-efficacy

distressing thoughts more than other groups. IR umpires improved in SE to regroup, resiliency of SE, and overall SE more than the workshop group. Within groups, IR umpires significantly improved across all five domains, workshop umpires improved in four (no change in SE to control distressing thoughts), and control umpires improved in three (no change in occupational or SE to control distressing thoughts). Conclusion: This study provides evidence that MPT and IR can be beneficial to umpires.

Goal setting intervention as a practical regulator in golf

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ABSTRACT

Goal setting, is a technique used in sport performance with the purpose to direct attention and persistence, usually used in motivational processes. Golf is a sport that can get very challenging easily, in psychological demands, specially in terms of emotional regulation. In this case, we explore a specific intervention with a young male talent (international level) of 15 years old, that expressed inconsistency in performance, deteriorated parent relationship regarding sport competition and lack of emotional management, in a hypothetical drop out rising scenario. Taking that prior information in count, we established that we need to make a general evaluation of his performance, evaluate anxiety levels and build an intervention plan. We analysed his results, access psychological factors, improve is psychological condition with an intervention, and with that, influence his performance. We analyse nine official competitions, that were split in three moments of analysis. Before intervention, during intervention, and after intervention. To measure his results, we used his official records of classification in his sport federation. To measure self-confidence, cognitive and somatic anxiety, we used CSAI-2, witch we applied, in the intervention period (to stablish a baseline) and after intervention, to compare. In intervention, we define goals for his training process, with technical and scientific recommendations, and then, checked how many goals, the athelete accomplish by session. We applied CSAI-2, one and a half hour before competition start. We defined eight goals, that should be accomplish during three weeks, in three sessions per week, during intervention period. These goals, were defined in a shared process, with the coach, the athlete and the sport psychologist. Regarding results, we observed that his classifications improved from the first period until the third period of analysis. Considering the goals plan created, the athlete, gradually improved his accomplishment score, in the three weeks of intervention. The results observed in the psychological assessment made with CSAI-2 for the period of intervention and post-intervention, shown that self-confidence improved, somatic anxiety decreased and cognitive anxiety stayed the same. With this intervention we can conclude that

KEYWORDS

Goals; Performance; Golf; Regulation

psychological intervention in sport are relevant, and can be an asset. Specifically, the use of goal setting to regulate psychological process and influence performance, as a reaction to a more adverse situation, in practical and applied terms.

Effects of SMR/Theta ratio neurofeedback on golf putting performance

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ABSTRACT

Electroencephalogram (EEG) neurofeedback is a method that teaches participants to improve specific behavioral performance by regulating their cortical activation using visual or auditory feedback transformed from EEG signals. Previous studies have suggested that higher levels of sensorimotor rhythm (SMR)/theta activity are associated with decreased sensorimotor and emotion interference, thus promoting attention processing. Consequently, neurofeedback training targeting SMR/theta ratio may be beneficial for athletes. The purpose of this study was to investigate whether SMR/theta EEG-based neurofeedback training improved cortical activity and putting performance in elite golfers. In a randomized controlled trial, 17 elite golfers (mean age 18.1 ± 2.2) either completed 10 sessions of SMR/theta neurofeedback training (experimental group, $n = 9$, handicap = 5 ± 2.4 , years of golf experience = 6.9 ± 2.3), learned to voluntarily increase SMR/theta power, or participated in a sham feedback intervention (control group, $n = 8$, handicap = 4.9 ± 1.6 , years of golf experience = 7.8 ± 1.2). There was no difference in age, handicap, or years of golf experience between the two groups analyzed by an independent t test. None of the participants had a history of neurological or psychiatric disorders. All participants performed 60 putts in the field during a 32-channel EEG measurement in pre-training, post-training, and follow-up sessions. The results revealed that the experimental group demonstrated increased putting performance in pre-training as well as post-training sessions, but not the control group. Both groups did not show significant change in performance from post-training to follow-up. Moreover, the experimental group showed greater SMR/theta power in both post-training and follow-up compared to pre-training. This study concluded that increased SMR/theta during action preparation is trainable by neurofeedback training, and better putting performance for golfers in a SMR/theta neurofeedback training can be maintained after a 7-day follow-up. Increased SMR/theta could imply reduction of interference from processing somatosensory and arousal information to keep sustained attention, which results in better putting performance. These findings are not only valuable in understanding the basic neural mechanisms underlying SMR/theta neurofeedback, but also provide golfers a practical training tool for superior putting performance.

KEYWORDS

sport performance;
sensorimotor rhythm; theta;
electroencephalography;
neurofeedback training

Improving adolescent golfers' concentration and self-awareness before performance through a 12-week psychological intervention

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ABSTRACT

Golf putting is a closed-skill performance that athletes are more likely to be susceptible to psychological factors. The higher attentional control player made, the better putting performance they got. By using a twelve-week intervention including sitting meditation and diaphragmatic breathing, the purpose of this research was to improve golfers' self-awareness, adaptation, and adjustment strategies to refocus under stress. Two male amateur golf players (aged 19 and 17 years) participated in the present study. Both of them have ten-year experiences in golf and had won the Taiwan Amateur Championship. The sport psychological intervention was twelve weeks long and contained two phases (six weeks per phase and 90mins per week). A private indoor training room was used as an intervention venue. In the first phase (1-6 weeks), the intervention purpose was to improve players' ability to relax, concentrate, and self-awareness. In each intervention course, participants were first invited to exercise diaphragmatic breathing and sitting meditation for 5 minutes, to separate Reversi chess by color (focus on the moment), and then to perform three putting trials at 12-feet. The exercise was repeated five rounds for each intervention course. After each round of putting trials, participants were asked to discuss what they feel during the preparation and when performing the putting. The second phase (7-12 weeks) was aimed at applying the psychological skills they learned in the first phase. A stressful situation activating their motivation was created by playing a board game "Flix Mix". Moreover, the complexity of the putting task was increased using the golf training simulator "Trackman" and the distance of the putting trail was prolonged at 30-feet. The purposes were to strengthen players' self-awareness of the connection between their emotional changes and the putting performance, to identify the influence of their mental status, and to adapt and adjust their preparation before performing the task. The research results indicated that after the intervention, participants' scores on the Athletic Psychological Skills Inventory were significantly improved. They recognize that they were able to master the pre-performance preparation in a better manner, to get into the condition at competition faster, and to become more concentrated in the competition than that in the past. In addition, participants' parents indicated the players' improvement such as more focused sight and smoother movements. The findings showed that a twelve-week intervention combining diaphragmatic breathing, sitting meditation, and several mental trainings can improve athletes' concentration, self-awareness, and facilitate golf putting performance.

KEYWORDS

sitting meditation; mental training; preparations; self-awareness; attentional control

The effects of parental monitoring and leisure boredom on early adolescents' internet addiction

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ABSTRACT

Introduction: Boredom avoidance is one of the major motivations for using the Internet. If leisure time is perceived to be boring and fails to satisfy expected optimal experience, adolescents may be motivated to seek another alternative - the Internet. Early adolescents usually have worse self-control and they are a higher risk group for Internet addiction than older adolescents or adults. Parental monitoring may deter adolescents from becoming addicted to Internet use. **Purpose:** This study explored the effects of parental monitoring, leisure boredom, and Internet addiction in order to prevent 5th and 6th grade students' Internet addiction. **Methods:** Participants included 451 5th and 6th grade students in central Taiwan. This study adopted a cross-sectional design and convenience sampling for investigation with a structured questionnaire that consisted of demographics (gender, age, BMI), parental monitoring (a single question- does the parent have the monitoring on the Internet), Leisure Boredom Scale (LBS), and Young's Internet Addiction Test (IAT). The criteria in this study was students not involved with the reading disorder or in Special Education Class. Moreover, Incomplete questionnaires were not counted in the analysis. The Ethical approval for the study and the consent procedure was approved by the Jen Ai Hospital Human Research Ethics Committee (JAH HREC-109-27). Descriptive statistics (e.g., means/M, standard deviation/SD, percentages) were presented at first. After that, Multiple logistic regression analysis was employed in order to determine statistically significant differences on the dependent variable with individual students as 「No-Internet Addiction」 or 「Yes-Internet Addiction」 by the independent variables including demographics, parental monitoring and leisure boredom. Their univariate odds ratios (OR) and their respective 95% confidence interval (CI) were derived. All statistical analyses were performed using the SPSS v25.0; and statistical significance was set at a level of $p < 0.05$. **Results:** The participants were 50.8% male, their ages ranged from 10 to 13 years ($M = 11.35$, $SD = 0.56$), and the average BMI value was $19.10 \text{ kg/m}^2 (\pm 4.28)$. 81.2% of the parent had the monitoring on the Internet and 33.7% of all participants were prone to Internet addiction. Multiple logistic regression analysis revealed that participants who male, non-parental monitoring, and high leisure boredom were more prone to Internet addiction in early adolescents. **Conclusion:** Overall evidence suggests that parental monitoring is a major inhibitor of Internet addiction. Thus, early adolescents should be supervised in their daily routines and encouraged to participate in

KEYWORDS

Internet addiction; early adolescent; leisure boredom; parental monitoring; gender

Association between the residents' attitude toward the sport event and the life quality during the COVID-19 period

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ABSTRACT

Previous studies have examined the association between sporting event participation and their health, especially on participants mental health such as their quality of life. However, little studies have focused on the effects of local residents' mental health when hosting a sporting event. Attachment is a construct root of relationship that represents rich emotion bonds between an individual and a specific object. When a sport event is being held, residents may create a local atmosphere and directly interact with the participants as being volunteers by providing services to the participants. These interactions will directly or indirectly affect their quality of life. Expanding the theoretical relationship between emotional attachment and quality of life by providing a strong foundation that meet the need of sport tourism development. This study aimed to explore the associations between the resident's attitude and their quality of life. This study focuses on the hallmark marathon event that was held in Taiwan in 2020 during COVID-19. In addition, this study also examined the differences between the socio backgrounds and degree of involvement. Through purposive sampling, a total of 270 valid questionnaires were obtained. The questionnaires incorporated an event attachment scale, a quality of life scale, and demographic backgrounds. The data was analyzed with descriptive statistics, one-way MANOVA and hierarchical linear regression. The results showed that the marital status of residents had a significant difference in quality of life. Moreover, different degree of involvement in the sporting event has a significant difference in event attachment and quality of life. Excluding their gender, age and marital status to the explanation of quality of life, their event attachment to quality of life has a significant explanation for 44 percent. In conclusion, the event attachment influences residents' quality of life. Also, the residents who volunteered or helped during the event had more agreement in event attachment and quality of life than those who did not. During the pandemic period, evaluating quality of life of residents is important to the local government and even the country. The present study made a contribution by providing a way to evaluate quality of life through hosting a sport event.

KEYWORDS

event attachment; QOL; life satisfaction; happiness; recurring sport event

Perceptions of need satisfaction, need frustration, and motivational regulations between athletes in specializing and investment years

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ABSTRACT

Introduction: Ample research has indicated increasing rates of athlete burnout throughout adolescence (Isoard-Gautheur et al., 2016), particularly across specializing (aged 13–15) and investment (aged 16–18) years (Côté & Vierimaa, 2014). However, few studies have examined how psychological needs and motivational regulations may change or differ between the two developmental stages. **Purpose:** Guided by self-determination theory (Deci & Ryan, 1985), this study compared need satisfaction, need frustration, and motivational regulations between athletes in specializing and investment years. **Methods:** Participants were 367 athletes (Mage = 15.54; 212 boys, 155 girls; 186 specializing years, 181 investment years) from four high schools (14 team and individual sports) in the southwestern and midwestern U.S. They completed a survey assessing satisfaction and frustration of autonomy, competence, and relatedness, and motivational regulations on 7-point Likert scales. A multivariate covariance of analysis (MANCOVA) was conducted to compare perceptions of four motivational factors—need satisfaction, need frustration, autonomous motivation, and controlled motivation—between the athletes in specializing and investment years after controlling for gender. **Results:** The MANCOVA revealed a significant multivariate effect, Wilks' $\lambda = .94$, $F(4, 361) = 5.42$, $p < .001$, partial $\eta^2 = .06$. Follow-up univariate analyses with Bonferroni-adjusted p-values ($.05/4 = .0125$) indicated that, regardless of gender, the athletes in investment years had greater need frustration ($M = 3.46$ vs. 3.16), $F(1, 364) = 7.88$, $p = .01$, partial $\eta^2 = .02$, and controlled motivation ($M = 3.39$ vs. 2.86), $F(1, 364) = 25.29$, $p < .001$, partial $\eta^2 = .04$, than their counterparts in specializing years. In contrast, perceptions of need satisfaction ($M = 4.90$ vs. 4.91), $F(1, 364) = 0.02$, $p = .88$, partial $\eta^2 = .00$, and autonomous motivation ($M = 5.43$ vs. 5.47), $F(1, 364) = 0.14$, $p = .76$, partial $\eta^2 = .00$, were not significantly different between the athletes in specializing and investment years. **Conclusion:** Findings suggest that U.S. athletes in investment years may experience higher levels of maladaptive motivational factors, which could lead to greater burnout and dropout, than athletes in specializing years. These results are consistent with previous research that shows greater burnout symptoms as athletes get older. Motivational interventions targeting the creation of need-supportive environments by coaches and parents during athletes' transition from specializing to investment years are warranted.

KEYWORDS

Self-determination theory; basic psychological needs; motivation; developmental stages

Characterizing cortical dynamics for superior putting performance in skilled golfers

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ABSTRACT

Introduction: Cognitive motor performance such as golf putting is considerably affected by the athlete's mental state. The psychomotor efficiency hypothesis postulates that the mental state of optimal cognitive motor performances are accompanied by the reduction of non-essential task processes and elevation of task-relevant processes. Although several electroencephalographic (EEG) correlates—left temporal alpha (8-12Hz), central sensorimotor rhythm (SMR, 12-15Hz), and frontal theta (4-7Hz) —have been associated with such mental states, the precise temporal dynamics of these oscillations in golf putting preparation were unknown. **Purpose:** To precisely characterize the optimal temporal dynamics of mental states associated with the psychomotor efficiency hypothesis, this study compared the successful and unsuccessful performances of neural oscillations via time-frequency analyses prior to golf putting. **Methods:** 21 skilled right-handed golfers performed 60 putts in a distance with 40 to 60 successful rates, during which behavioral and EEG data were collected. The mean handicap was 15 (SD = 5.6). Successful performance (SP) was defined as the ball going in the hole, and unsuccessful performance (USP) was the ball not going in. EEG data were analyzed by wavelet transformed between SP and USP 2 seconds (-2s) prior to putting execution. **Results:** Compared to USP, SP was preceded by greater SMR and left-temporal alpha at -1.7s to -1.6s and -1s as well as increased frontal theta at -1s. These results suggested that the optimal mental states of superior putting performance were accompanied by the inhibition of task-irrelevant processes and amplification of task-relevant processes. **Conclusions:** The mental state of optimal putting performance was associated with refinement and quiescence, concurrently modulated by the dynamics of SMR, left-temporal alpha, and frontal theta oscillations in skilled golfers.

KEYWORDS

EEG; Sport performance; Neural efficiency

Lone girls: exploring the experiences of girls on boys' sports teams

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ABSTRACT

Existing literature that has informed our understanding of youth sport experiences has largely involved investigations of

KEYWORDS

Positive youth development; Quality participation; Girls' sport; Critical feminism

populations that are similar to each other (e.g., same age, sex). There are, however, instances in sport where individuals are inserted into situations that counter traditional developmental pathways. For example, athletes deemed highly skilled in comparison to their age cohort may play in older age categories (i.e., 'playing up') for exposure to higher levels of competition and intensity that will facilitate decision-making and performance. It is critical though, that such a decision not rest solely on performance-related motives as research suggests implications for athletes who 'play up' from a more general developmental perspective. A similar situation that has received little research attention pertains to girls engaging in sport whereby the remainder of their teammates are boys (i.e., the 'lone girl'). Importantly, researchers have yet to explore the contextual considerations and subsequent developmental outcomes of the lone girl experience. Accordingly, the purpose of this study was to explore the experiences of lone girls in sport. Women between the ages of 17 and 25 years who had competed as a lone girl in a competitive team sport during their specializing and advancement years of youth sport (~14-17 years old) were recruited for this study. In total, 13 semi-structured interviews were conducted remotely (e.g., Zoom, phone call), audio recorded, and transcribed verbatim. Through the use of a dual-narrative analysis, four narrative typologies of the lone girl experience were put forth: (1) From Insider to Outsider, (2) Boys' or Bust, (3) High School Hang-up, and (4) No Road to the Show. Moreover, consultation with youth sport literature revealed implications related to the setting (e.g., lack of opportunities), activities (e.g., more deliberate practice), and social environment (e.g., minimal social connection) of sport participation that may influence the attainment of developmental assets and positive outcomes. Further, the application of a critical feminist lens highlighted societal constructions and expectations of gender that influenced participants' sport involvement and outcomes—thus providing a holistic understanding of the lone girl experience. Lastly, this research advances the positive youth development literature by offering theoretical explanations and future research directions, in addition to providing practical suggestions for key stakeholders (e.g., coaches, parents, organizations).

Meta analytic review on the relationship between self-management and psychological states in Korean martial arts players

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ABSTRACT

Self-management is defined as people's capacity to effectively monitor, control, and manage thoughts, emotions, and behaviours that could facilitate goal accomplishment and has shown to facilitate in enhancing one's psychological state and performance in sports. Martial arts practitioners are found employing self-management during training and competition to assist in monitoring, evaluating, and controlling the mental, emotional, technical, and physical dimensions of sports performance toward desired goals particularly in enhancing their psychological state. However, despite the multitude of studies verifying the relationships between martial arts athletes' self-management and psychological outcomes, no attempt has been made to systematically investigate these variables and consolidate the findings in the literature through a meta-analytic approach. This study examined the relationship between self-management and exercise self-confidence, satisfaction, and commitment in both modern and traditional martial arts among Korean practitioners using meta-analysis approach. It also investigated the level of sports participation and different martial arts sports as potential moderating variables. In total, 22 published Korean studies yielded 299 individual effect sizes and were included in the final meta-analytic pool. The included studies featured boxing, judo, fencing, wrestling, archery, kumdo, taekwondo, and Ssireum-a Korean traditional martial art with similarities with judo and wrestling. The Comprehensive Meta-Analysis (CMA) version II program was used to accurately estimate the effect sizes from the selected studies. Results revealed that the relationships between self-management and exercise satisfaction and self-confidence were moderate, whereas the relationship between self-management and exercise commitment was large. The effect of the training dimension of self-management was found to be the largest on exercise commitment while that of the mental dimension was second largest on exercise commitment. The influence of self-management on - athletic satisfaction was highest in Judo athletes, exercise commitment was largest in Ssireum, and exercise self-confidence was highest in wrestling. Finally, the use of self-management strategies was relatively less effective for elite practitioners compared with non-elite participants. The findings underscore the effectiveness of self-management strategies to enhance Korean martial arts practitioners' exercise self-confidence, commitment, and satisfaction. It also highlights the importance of the promotion of interventions and educational programs on how to incorporate/employ self-management in athletes' sports training. Other findings about self-management and psychological states of Martial arts players and their implications will be discussed further.

KEYWORDS

self-regulation; Korean traditional sports; martial arts; athlete's self-management questionnaire; psychological state

Penalty kicks in elite football: identifying factors related to the player strategy

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ABSTRACT

Introduction: The analysis of penalty kick performance in football has played an important role in sports science (Paterson et al., 2020). There are two main strategies for taking a penalty, the keeper-independent strategy, and the keeper-dependent strategy (Kuhn, 1988). One main characteristic that differentiates the two strategies is the Spatio-temporal pattern of gaze (Noël & van der Kamp, 2012). Strategic, anticipatory, attention, and perception-based factors can also influence the success of the penalty kick (Memmert & Noel, 2020). Several studies have investigated the penalty kick strategies, but the results are limited due to the experimental design, which did not reflect the unfolding of an interaction between the two players. **Objective:** This study aimed to identify the relationship between a set of observable variables and the players' strategy using an expert-validated observational system for penalty kick analysis in football (OSPAF). **Methods:** The dataset consists of 150 penalty kicks from the main European football leagues (Premier League, Ligue 1, Bundesliga, LaLiga, Serie A, and Champions League; seasons 2017 to 2020). The videos were recorded by TV broadcasters and were registered and analyzed post-event. All data was annotated by two experienced researchers using the OSPAFA. Cohen's kappa (κ) was utilized to verify the reliability of OSPAFA (inter-observers and intra-observer). Logistic regression (enter method) analyses were performed. Dimensions and categories of OSPAFA were coded in Lince software (Gabin et al., 2012; Soto et al., 2019). The p level considered < 0.001 (95% confidence interval). All data were analyzed using JASP software (Team, 2020; JASP Version 0.14; Computer software). **Results:** The OSPAFA kappa values showed very good strength of agreement (0.95 and 0.92). The run-up speed slow, run up fluency running with pauses, penalty taker gaze behavior not at the ball, and the deception performed by the penalty taker were related to the goalkeeper dependent strategy ($\chi^2(145) = 130.596, 86.5\%$ correct classifications, $p < .001$). The model correctly classified 86.5% of cases. The goalkeeper tactical action guess was related to the goalkeeper independent strategy ($\chi^2(148) = 137.680, 87.5\%$ correct classifications, $p < .001$). **Conclusion:** OSPAFA variables (e.g. run-up speed and fluency, penalty taker gaze behavior, and deception by penalty taker) were able to classify correctly 86.5% of cases on the likelihood of the penalty taker strategy. OSPAFA may serve as a standard tool for observational investigations of penalties in football to make the results from different studies more comparable.

KEYWORDS

attention; performance analysis; football psychology; gaze behavior; deception

Lessons from an emerging practitioner working in foreign settings

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ABSTRACT

This oral presentation is a reflexive account, which explores the personal journey of an emerging practitioner who practices in a foreign setting, on track for the Tokyo Olympics. The oral presentation will encapsulate a unique experience sheds a light on interational sport psychology, in which the practitioner who hails from the UK, and who is of a mixed African heritage, now operates a full-time consultancy in South East Asia in a highly diverse cultural setting. It is hoped that this oral presentation will provide a unique take on practicing sport science abroad outside of a practitioners home country, which is of a timely discussion given the ever increasing rates of globalisation. The first section of the presentation will include an introduction to the practitioner, his demographics (ethnicity, nationality, race) and journey into sport psychology. This will be quickly followed up by the practitioners development of philosophy and practicing competencies, such as training in REBT/CBT and exploring methods beyond traditional mental skills training and utilising organisational psychological principles. The presentation will then explore feelings of being a fraud, as is common with emerging practitioners (aligned to the Dunning Kruger effect), and how true practicing confidence was built on the back of many initial failures and mistakes in practice. This includes issues with cultural assimilation and difficulties assimilating in well-established teams. Following from this, the practitioner will discuss how lessons taken from the ground up, support from supervisors, and adjusting RECBT to fit the culture assisted in producing real and tangible outcomes, and how practice accounted for diversity in this sense. This section would further explain how the practitioner began to adopt a higher reliance on learning foreign languages, reading microexpressions, and heightened awareness of body language; as these strategies were used to take into account the present cultural factors (such as collectivism and passive communication styles which are highly prelevant in this setting). Paying close attention to these factors and adopting a high amount of constant reflection have resulted in the practitioner evolving and having a much higher success rate with clients in terms of outcome and relationship management. The presentation will then move on to how sport psychology was implemented at the first major games for the practitioner (the Tokyo Olympics), and what the next areas of advancement are for the practitioner to grow and develop to a more successful practice.

KEYWORDS

applied sport psychology; cultural sport psychology; south east asia; reflexive sport psychology; contextual sport psychology

Effect of Emotional Freedom Technique (EFT) on heart rate, blood pressure and performance in national level shooters

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ABSTRACT

EFT (Emotional Freedom Technique), also known as "tapping," is a relatively recent form of energy psychology that combines applied kinesiology with certain psychological principles to alleviate psychological distress in individuals. In this technique, the clients are required to softly touch their acupressure points (mostly on the head/hands) with their fingertips that is aligned to the voicing of specific statements (Craig, 2011). Recent researches have connoted the influence of EFT on various neurological, physiological, and epigenetic factors (Church, 2013). However, there is a dearth of literature that seeks to establish the effects of EFT on the physiological components such as blood pressure, heart rate, or galvanic skin response, especially in the context of athletes. Hence, the present study seeks to evaluate the effectiveness of an EFT-based intervention on the heart rate and blood pressure (circulatory system) and performance of 10m air pistol shooters. The sample for the given study comprises of National level shooters, aged between 16-17 years (N = 14, Mean and S.D of 16.42 ± 0.51) who were randomly assigned to experimental (N = 7) and active control group (N = 7) conditions. The experimental group was then treated to a 3-week (2 sessions per week) EFT program while the active control was kept engaged through an inspirational lecture by the coach for the same duration. For the purpose of assessment of the effect of EFT on the circulatory system, measures of heart rate (HR) and blood pressure (BP) were recorded, while for performance, the shot accuracy of the shooter was noted. Post-intervention analysis of results indicated significant improvements in HR (-4.62%, $p = 0.01$), systolic BP (-3.6%, $p = 0.001$), diastolic BP (-5.16%, $p = 0.004$), and performance (+1.21%, $p = 0.01$) of the experimental group implying the effectiveness of EFT as a suitable intervention program for improved readings in heart rate and blood pressure (circulatory system) measures along with shooting performance (shot accuracy) of the athletes.

KEYWORDS

Emotional Freedom Technique; Heart rate; Performance; Systolic Blood Pressure; Diastolic Blood Pressure

Preparing the swedish men's handball team for three consecutive olympic games: a sport psychology practitioner's reflections

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ABSTRACT

During the last decade I have been employed as a sport psychology practitioner for the Swedish men's handball team (further – the Team). Pinnacles of my work were psychological preparations for three consecutive Olympic Games (2012-2020). In this presentation I will share my narratives about the psychological preparations for these Games and lessons learned. Major

KEYWORDS

Handball; Olympic Games; Professional philosophy; Professional development; Sport psychology practitioner

interventions were carried out during the pre-Olympic camps about one month before the related Games. The content was adapted to match the request from the coach and my assessment of players' needs. Below I organize my experiences in three narratives. The first is "The Team is in crisis, and I struggled to show competence and earn players' trust". The players gathered after a heartbreaking defeat in a qualifying match for a future World Championship. The Team were torn, and the 2012 Olympics was approaching fast. The coach highlighted the need for team building to mend the pieces and be able to perform as a unit. I answered the call by conducting group workshops and work with individual athletes clarifying roles and goals. The Team performed over expectations and won a silver medal. I for my part, won trust. The second narrative is entitled "Rio had a sweet melody, but we danced to a different tune". Preparing for Rio 2016, the coach asked for a copy-paste story to repeat the prior success. The Team felt in harmony, and everything went (too) smooth, few players wanted to prepare for possible adversity. I worked with team dynamics and chose to mainly focus the individual work on potential stressors and coping. Soon I realized I was dancing on my own. Sweden ended last in their group, only winning one match. At the time I am writing this abstract, I plan for the pre-camp for Tokyo 2020 and my narrative so far is "It's possible to be big in Japan but I'm the worrying kind". There has been a rejuvenation of the Team and a new coaching staff focuses on the Team values requesting my mainly individual level work. I think we mix apples and oranges by talking about values but not about behaviors and not preparing enough for potential stressors. Here are the lessons learned to share: professional philosophy is dynamic and changes with experiences, the situation in the Team is a key for planning the applied work, and coaches' requests may bring changes in the practitioner's approach.

The impact of the Covid-19 pandemic on the motivation of young athletes

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ABSTRACT

Introduction: Rules of social distance and corresponding concerns as a result of COVID-19 have impacted sports practice and physical activity all over the world. Understanding how the restrictions imposed by the pandemic impact the motivation of young athletes represents an important step towards promoting actions and policies that mitigate the negative impacts of the pandemic, maintaining athlete's fitness and health and encourage the return for their sports teams after the end of social distancing rules. Purpose: The aim of this research is to identify possible

KEYWORDS

motivation; sports; pandemic; self determination; basketball

impacts of the Covid-19 pandemic on the motivation of young basketball athletes. **Methods:** The participants in this study are ten U-16 years male basketball players. The athletes are part of the same team, from a Brazilian sports center and are current national basketball champions. A qualitative approach was used, which allows an understanding of the social phenomenon, which in the case of this investigation, is the motivational regulation of young Brazilian basketball athletes during the return to the training routine. Semi-structured interviews were conducted using a script constructed and based on Self-Determination Theory. The interviews were recorded, transcribed and analyzed using the NVivo 11 Qualitative Data Analysis software. **Results:** It was found that the pandemic had a negative and global impact on athletes' motivation. The aspect most mentioned by the athletes was the cancellation of the championships, identified as a source of sadness and demotivation. Although athletes highlight the relationship with teammates as an important source of motivation and incentive for the practice, most reported that they did not feel any major change in the perception of relationship during the pandemic, since socializing at the gym was partially replaced through in-app conversations, video calls and online games. 80% of athletes reported frustration due to the decrease in their performance during the pandemic and, in addition, half of them even considered abandoning sports practice. **Conclusion:** The pandemic and restrictions related to social distance can negatively impact the motivation of young athletes, leading even to the drop out of sports practice. The cancellation of events and competitions and uncertainty whether they will be able to return to pre-pandemic performance levels seem to represent a special risk for athletes' motivation and return to sports.

Shared zones of optimal functioning: an applied framework to capture optimal performance, team momentum and leader-follower dynamics

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ABSTRACT

The Shared Zones of Optimal Functioning (SZOF) is a probabilistic approach aimed at describing, explaining, and predicting optimal and sub-optimal performance in team settings (Filho, 2020ab). Of note, the SZOF framework is derived from the cross-fertilization of two well-developed frameworks in the field, namely Shared Mental Models and the Individual Zones of Optimal Functioning (IZOF). More specifically, the SZOF framework is based on two central tenets: (1) optimal performance in team settings depends, in part, on shared cognitive-affective-behavioral states (see Filho & Tenenbaum, 2020); and (b) teams' performance states can be modelled through an adaptation of the probabilistic approach

KEYWORDS

shared zones of optimal functioning; momentum; leadership; group dynamics; IZOF

used to estimate individual athletes' IZOFs (see Flett, 2015; Kamata et al., 2002). In practice, the SZOF framework can be used to (a) generate probabilistic curves to capture optimal, moderate, and poor performance experiences in teams; (b) track "good" and "bad" team momentum through the analysis of within-team performance fluctuations; and (c) estimate within-team psychophysiological synchrony and leader-follower dynamics, namely shared leadership and leader-follower dichotomy patterns. In the present study, the above-mentioned theoretical and applied tenets of the SZOF were tested in cooperative juggling. Fourteen skilled jugglers (ten males and 4 females) were randomly assigned to seven different dyadic teams and asked to juggle for 30 trials, while having their performance (i.e., total time juggling, in seconds), affective states (Affect Grid; see Russell et al., 1989), and attentional levels (i.e., association-dissociation continuum; see Bertollo et al., 2015) recorded. Furthermore, the jugglers' heart rate, electrodermal response, and skin temperature were measured using synchronized E4 empatica physiological data acquisition wristbands. Ordinal logistic regression curves, frequency counts, and cross-correlation analyses revealed that each dyadic team exhibited idiosyncratic affective, attentional, and physiological states linked to (a) optimal, moderate, and poor performance; (b) team momentum patterns; and (c) leader-follower dynamics. Altogether, these results corroborate the SZOF framework's validity in capturing peak performance experiences, "good" and "bad" momentum performance fluctuations, and the direction of leadership (i.e., who leads and who follows) in dyadic teams. As such, practitioners should develop team-specific interventions and shared bio-neurofeedback protocols to increase the likelihood of optimal performance, good team momentum, and effective leadership in team settings.

Validity evidence of the Resilience Scale for Sport (RS-Sp) in Brazilian athletes

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ABSTRACT

In performance sport, athletes are exposed to pressure situations and physical and mental stress with the aim of achieving optimum physical performance. The resilience has been shown to be an important variable to stress management for the athlete. There are few specific scales to measure resilience in sport and none with good evidence of validity for the Brazilian athlete. The

KEYWORDS

Resilience; Psychometric; Performance; Athletes

aim of this study was to review the theoretical model of resilience in sport and test the validity evidence of a Resilience Scale for Sport (RS-Sp) in Brazilian athletes. The study was approved by the UFMG ethics committee (CAAE: 83220417.4.0000.5149). A total of 791 athletes (549 men and 242 women) aged 26.61 ± 7.95 from team ($N = 611$) and individual ($N = 180$) sports participated in this study. The EFA and CFA was conducted to assess the model fit of the original model. The Hierarchic Model of Resilience in sport was defined in this study. At the first level we identified sporting experiences and personal resources. On the second level, Sporting Experiences were represented by competition and training experiences. Personal Resources were identified as internal and external resources. Internal resources were represented by individual psychological characteristics and external resources by family/friends support and coaches/teammates support. The RS-Sp assesses the athlete's resilience in the face of adversities experienced throughout their careers as well as adaptive responses. The RS-Sp consists of 15 items, divided between five-factors with respective internal consistency (alpha; ω): 1 - Sporting Experiences (.742; .82); 2- Family Social Support (.774; .77); 3- Personal Resources and Competence (.699; .70); 4 - Spirituality (.806; .74); 5- Sport Social Support (.644; 0,68); RS-Sp total (.812; 0,89). The RS-Sp presented satisfactory validity evidence to Brazilian athletes: [KMO = 0.932; Bartlett's Test of Sphericity 18447.8 df = 2628; $p = 0.000010$; Unique = 0.934; ECV = 0.827; MIREAL = 0.205; CFI = 0.914; TLI = 0.887; RMSEA = 0.051 (0,044-0,058)]. The total score is determined by the average of the sum of the items of each factor and classifying the resilience in: extremely low (< 10.4); low ($> 10.4 < 11.7$); medium ($> 11.7 < 12.7$); high ($> 12.7 < 13.6$); extremely high (> 13.6). It is concluded that the RS-Sp is a reliable measuring instrument for the evaluation of resilience in Brazilian athletes. The athlete's exposure to stressful situations contributes to his growth. However, it is of fundamental importance the psychological accompaniment so that these experiences are not elaborated as a frustration, but as a support to live new situations in the sport.

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Gendered experiences in sport: challenges and barriers on the road to elite coaching worldwide

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ABSTRACT

Women are still subject to stereotypes that impede their path to elite sport. Initiatives have been conducted to increase participation, but only 11% of accredited coaches at the Rio 2016 Olympic Games were female (IOC, 2019). While current literature has identified some barriers experienced by female coaches, there is little research comparing male and female coaches' perceptions on an international scale. Nor do we understand to what extent

KEYWORDS

Gender gap; diversity; elite coach; stereotypes

unique sports culture imposes different challenges onto coaches of different backgrounds. Therefore, the purpose of this study was to explore the experiences of elite coaches across multiple sports to better understand the challenges they have been faced with during their career in elite sport. We also aimed at comparing the experiences of male and female coaches from different cultural backgrounds to deepen our current understanding of sport. The reported study is a qualitative part of a larger mixed-methods research study. One-hundred-three elite coaches indicated their interest to be interviewed after completing a survey. Our purposeful sample for the reported study is 30 elite coaches (15 male and 15 female) from diverse backgrounds (e.g., sport type, sexual identity, ethnic identity, etc.). We are currently conducting individual semi-structured interviews over Zoom. A reflective diary is kept after each interview to record our changing understanding of the subject matter and identify the saturation point. All interviews are being transcribed verbatim and analysed using thematic content analysis. This presentation will report initial results focusing on different experiences and perceptions held by male and female coaches working in masculine (e.g., rugby), feminine (e.g., gymnastics) or gender-neutral sports (e.g., swimming). Insofar, different level barriers (see LaVoi & Dutove, 2012) have been identified some of which are unique to some sports (e.g., gendered stereotypes may be less prominent in gender-neutral sports). Barriers that go beyond gendered stereotypes and societal roles are also emerging. These seem to affect both male and female coaches seeking a career in elite sport. We conclude with suggestions on how the identified challenges could be addressed to support coaches to achieve their career goals. It appears that any efforts made to promote gender equity have to be further tailored to meet the unique cultural challenges evident across different sports that have been further highlighted by the ongoing pandemic.

Psychological skills and techniques utility patterns in elite deaf sport

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ABSTRACT

Introduction: Assessing how frequently athletes use psychological skills and techniques is an integral part of the psychological skills training (PST) process in elite able-bodied and Paralympic sport (Beckmann & Elbe, 2008; Hanrahan, 2007) and provides valuable information about utility patterns (Taylor, 2017). In comparison to able-bodied and Paralympic athletes, research on Deaf athletes' use of psychological skills and techniques is very limited even though they compete at a high competition standard within a separate sport movement, namely the Deaflympic sport. Due to their hearing impairment some adaptations for PST implementation with Deaflympic athletes are needed (Glezer &

KEYWORDS

Deaf sport; Deaflympics; TOPS; Hearing impairments; Psychological skills Training (PST)

Schliermann, 2020). Purpose: The main purpose of this exploratory study was to investigate utilization of psychological skills and techniques in different settings among elite Deaf athletes. Methods: The German version of the Test of Performance Strategies (TOPS; Thoms et al., 1999) was administered with the assistance of sign language interpreters to 84 (Mage = 28.4, SD = 9.4) active elite athletes of the German Deaf sport association from eight different sport-disciplines (50% team sports, 50% individual sports). One sample T-Tests and ANCOVAs were computed (control variable: years of experience in sport) to compare skills and technique use (DV) in training versus competition settings (IV) as well as between subgroups within the sample (IV). Results: The participants reported a significantly higher use ($p < .01$) of some skills/techniques during competitions than in training (Relaxation- Hedges $g = .89$; Imagery- $g = .51$; Goal-Setting- $g = .56$). Concerning the degree of hearing impairment, athletes hard of hearing (HOH) showed significantly more use of automatization in competition settings than their deaf peers ($\eta^2 = .093$). Deaflympic athletes who had won international medals more frequently used Imagery in competition than their peers who had not won an international medal at this competition level ($\eta^2 = .088$). Conclusion: The results reveal similarities between Deaflympic, Paralympic and able-bodied sport, because all athletes show more frequent use of psychological skills and techniques during competition than in training (Schliermann, 2014; Schmid et al., 2010; Thomas et al., 1999). Differences with regard to the frequency with which some techniques are used (e.g.: Imagery) between HOH and deaf athletes implies that hearing impairments may influence how frequently Deaflympic athletes utilize psychological skills and techniques. Further research is needed to investigate in more detail how hearing impairment influences the implementation of PST.

Exploring the double bind facing female coaches in high performance coaching

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ABSTRACT

Empirical evidence has indicated that coaching is predominantly dominated by males and remains impacted by gendered stereotypes (e.g., Norman, 2010, 2012; Fasting & Pfister, 2000). The gendered stereotypical biases inherently embedded into the organisational structures within which female coaches work may be indicative of a double bind dilemma (De Hann & Knoppers, 2019; Norman, 2016). In sport and coaching, just like in other organisational domains such as business (see Catalyst, inc. 2007), female leaders have to face at least three key predicaments: (a) extreme perceptions: too soft, too tough, and never just right; (b) the high competence threshold: women leaders face higher

KEYWORDS

Gender; Bias; Advancement; Performance Coaching

standards and lower rewards than men leaders; and (c) competent but disliked characterisations: women leaders are viewed as competent or likeable, but rarely both. These stereotypical biases are likely to restrict female coaches in a number of ways: access to opportunities, individual development, professional development and in turn career advancement. Thus, the purpose of this research aimed to explore the nature and effects of double bind dilemmas as these pertain to female coaches in high performance sport. A total of 20 women coaches coaching either male or female athletes in either individual or team sports participated in the study. Semi-structured interviews were conducted remotely through Microsoft TEAMS. Interviews were transcribed verbatim and subsequently analysed deductively employing principles of content analysis. Data analysis is currently ongoing and its aim is to outline the variability of female coaches' experiences, across multiple sports and national organisations, facing the three stereotypical impasses. Findings and conclusions from the study will contribute towards a better understanding of the stereotypical perceptions' women coaches encounter within high performance coaching in the United Kingdom. Practically, this research will generate a better understanding of the biases that female coaches experience and their effects on career advancement within coaching while raising awareness of these effects within the sporting communities.

Former male high school varsity athletes memories of their most meaningful scholastic sport experiences and perceptions of life skills learned: a 50 year retrospective study

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ABSTRACT

There has been considerable research examining the development of psychosocial outcomes and life skills development associated with sport participation in young people (See Anderson-Butcher, 2019 and Gould et al., 2014 for reviews). However, the long-term effects of life skills development in athletes has not been examined. To help fill this void in the literature this investigation had four purposes: (1) to chronicle the most meaningful memories of former scholastic athletes maintained across 5 decades of life; (2) to identify what life skills and psychosocial characteristics these athletes derived from their scholastic sport experiences as well as their participation in other extra-curricular activities; (3) to identify any negative effects of participation and how these influenced the former athletes across time; and, (4) to determine if the findings uncovered were consistent with the hypotheses resulting from Holt and colleagues (2016) synthesis of the Positive Youth Development (PYD) literature. A narrative case study design was used. Nine former male varsity athletes from a

KEYWORDS

Life Skills; Positive Youth Development; High School Sports

small city in the US representing a variety of sports in the 1968-69 scholastic sport season were interviewed. Results of a content analysis revealed that the former athletes clearly remembered specific scholastic sport experiences and coaching actions over 5 decades after they happened. Moreover, the following categories of psychosocial outcomes were identified: working hard, not quitting and doing one's best, following rules, honesty/integrity/character, teamwork/getting along with others and respect. While some unique psychosocial skills were learned through sport, the majority were established by the athletes' families and reinforced and further developed via sport participation. Eight of the nine participants felt that some of the psychosocial characteristics they developed via sport participation transferred to their lives after sport. These included teamwork/how to be a good team player, instrumental achievement skills like working hard, goal setting, confidence, dealing with stress, and self-regulation and character which included empathy/care for others and character/discipline. While the design of the study did not provide for a direct test of the hypotheses derived from the Holt and colleagues (2016) review of the qualitative PYD literature, the results were highly consistent with three of them (that "distal ecological systems and individual factors influence PYD through sport", that "a PYD climate based on relationships between athletes and peers, parents, and other adults can produce PYD outcomes" and that "gaining PYD outcomes in and through sport will facilitate transfer and enable youth to thrive and contribute to their communities").

A study of various antecedents of resilience among sports person - psychological flexibility, self efficacy, family environment and social connectedness

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ABSTRACT

In the present study, the importance of resilience is studied in the life and career path of a sports person and certain factors affecting resilience. The variables under study are psychological flexibility, self efficacy, family environment and social connectedness. Several studies over the years have identified individual and environmental factors correlated with resilience. Correlation analysis has been conducted to examine the extent and directionality of the relationship between resilience and these factors among sports person. Discussion of these findings focused on scaffolding on to previous research, the relevance to the present athlete performance and on its implications for coaches, trainees and sports person. The purpose of this study is to explore how these various factors affect an athlete's resilience. Resilience is the ability to bounce back. Researches have shown that athletes are prone to uncertainties like an injury and others,

KEYWORDS

Resilience; Social Connectedness; Family Environment; Self Efficacy; Psychological Flexibility

so various predictors to improve resilience among sports person are extensively studied. Psychological flexibility is the ability to be connected to the present moment irrespective of the unpleasant thoughts and feelings. Self efficacy is the one's belief in his or her potential to succeed. A stimulating family environment that is open, democratic or free may contribute positively in the performance of the athlete. Athletes are mentally healthy and perform better when they have high degree of available support to rely upon when required. 100 high level athletes were given questionnaires that included the Connor-Davidson Resilience scale 25 (CD-RISC-25), Acceptance and Action Questionnaire (AAQ-II), Rosenberg Self Esteem scale and Brief Family Relationship scales have been used. Correlation has been performed through SPSS. All these factors are positively correlated to resilience which shows that these four factors are very important in the life of professional athletes. This research has helped us identify factors that help athletes be more resilient and hence work on their better performance. Researches have also shown that athletes are more resilient than others and in this research it was proved that factors like social connectedness, psychological flexibility, self efficacy and family environment has an important role to play in resilience among sports person. This research has provided the understanding of the role of resilience in athletes lives and the attainment of optimal sport performance.

Anxiety, goal orientation and sports performance - a population based study

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ABSTRACT

The world of sports has embraced the fact that psychological factors can deeply impact athletic performance. In spite of that notion, many affiliates and coaches are not sold on the idea of implementing psychological skills training as part of the training curriculum. The current study was conducted to assess the effect of sport anxiety and goal orientation on an endurance test performance of adolescent soccer players. The population for the study were all registered 16 year old soccer players in Iceland in 2020-2021. The final participant count was 56% of the population. Thereof were 625 boys and 201 girls. The Sport Anxiety Scale-2 and The Task and Ego Orientation in Sport Questionnaire were used and The Yo-Yo Intermittent Endurance Level 2 for endurance testing. Results on gender differences supported existing research that girls experience more sport related anxiety symptoms and are higher than boys on task orientation. Correlation analysis showed a significant negative relationship between anxiety and endurance test performance for both genders with anxiety having more severe impact on the

KEYWORDS

sport anxiety; goal orientation; performance; adolescence; sport psychology

girls performance. Finally, a one-way ANCOVA with Bonferroni post-hoc assessing the effect of goal orientation profile on Yo-Yo performance demonstrated a significant difference between the Low Task/Low Ego group and the High Task/High Ego and High Task/Low Ego groups with total anxiety score as covariate for boys. No significant difference was found between the girls goal orientation profiles. The findings suggests that in sports, where the margin for error is so small, performance anxiety can be a deciding factor, and should therefore be a prime target for everyone involved. Finally, the results support the notion that task orientation development in sports should be a primary focus from young age.

How can my coach help me to perform at my best? elite divers' perceptions of coaching behaviours in competition

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ABSTRACT

Various coaching factors have contributed to athlete success during competition, such as having well-developed routines, effective communication skills, the ability to read athletes' emotional states, and to a large extent, the type and context of the sport. Previous research has identified intermittent breaks in competition as critical coaching moments for athlete performance in team sports. However, research has yet to explore the importance of the coach in individual sport competitions of similar structure, including diving. Therefore, the purpose of this study was to understand elite divers' perspectives of their coaches' behaviours during the long (approximately 8 hours) day of competition. Data was collected through semi-structured interviews with six Canadian national team springboard and platform divers. Interviews were transcribed verbatim, and a thematic analysis was used to organize data into themes and subthemes. The data analysis revealed two overarching themes including 1) the strategies and behaviours used by coaches to help their athletes successfully perform during competition, and 2) the elements of the coach-athlete relationship that were perceived to influence athlete satisfaction and performance. Among the strategies considered to be effective, athletes and coaches carefully developed and implemented individualized routines to deal with the pressures of competition. Athletes also valued regular and consistent interactions with their coaches as they relied on the instructions and feedback provided to direct their attention, prevent doubt from settling in, and manage their emotions. Athletes appreciated coaches' ability to adapt their coaching style based on the needs of each individual athlete for optimal preparation and performance. In terms of the relationship, athletes discussed the importance of trust and understanding with their coaches as crucial elements to facilitate performance in a high-risk sport. Athletes also found it

KEYWORDS

Coaching Effectiveness; Competition; Individual Sport; Coach-Athlete Relationship

particularly challenging when they felt their coaches were frustrated, disappointed, or giving up on them. From a practical perspective, our findings provide strategies and tools for diving coaches to successfully interact with athletes during intermittent breaks throughout the day of competition. Our findings can also be useful for coaches and athletes in sports with similar competitive structures such as track and field, snowboarding, freestyle skiing, and weightlifting. As a result, coaches will understand how to adequately adjust their behaviours to better suit the needs of their athletes, thus enabling coaches to become more effective in the context of competition.

Capturing moments of identity leadership during a youth sport tournament

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ABSTRACT

The social identity approach (SIA) provides an explanation of intergroup and intragroup experiences that has received growing interest in the field of sport psychology (Haslam et al., 2020). In particular, researchers have adopted the SIA to examine leadership behavior within youth sport environments (e.g., McLaren et al., 2021). According to the SIA, leadership is grounded in a leader's ability to represent, advance, create, and embed a shared sense of 'we' and 'us' in their group (i.e., identity leadership; Haslam et al., 2020). Research has shown that athletes' initial perceptions of their coaches' identity leadership were positively associated with members' group identification and subsequent attendance at practice two-months later (e.g., Stevens et al., 2020). Given that coach-athlete interactions extend beyond the immediate sport activity (Herbison et al., 2020), further exploring identity leadership within the broader social environments of sport (e.g., in the locker room; at team social functions) is an important next step. The purpose of this collective case study was to investigate whether youth sport coaches' behaviors (as captured through real-time interactions with other team members) align with identity leadership during a three-day youth ice hockey tournament. The Electronically Activated Recorder (EAR) was used to collect the verbal conversations between eight head coaches (Mage = 44.88 years, SD = 6.08) and members of their competitive youth ice hockey teams. EAR devices were programmed to record 50-second snippets of audio every 12.5 minutes, from 08:00 to 20:00 each day of the tournament. A total of 597 audio recordings captured coaches' sport-related conversations with their athletes, assistant coaches, and athletes' parents at the tournament. Coaches' observed behaviors were found to be representative of the four

KEYWORDS

ecological momentary assessment; electronically activated recorder; leadership; social identity; youth sport

elements of social identity leadership, and thus organized into the higher-order themes of identity prototypicality, advancement, entrepreneurship, and impresarioship. For instance, the observations provided examples of coaches modelling sportspersonship behaviors (i.e., prototypicality), leading conversations reflecting on team success and areas for improvement (i.e., advancement), helping individuals recognize their contributions to the team (e.g., entrepreneurship), and organizing social activities to promote a sense of 'us' in team members (i.e., impresarioship). The findings advance our understanding of what identity leadership looks like in practice. Specifically, the findings illustrate that identity leadership can be used in positive, but also negative ways, both during sport competition as well as the broader social environment (e.g., car ride to/from competition).

Perfectionistic tipping points: a new approach to examining the interactive effects of perfectionism

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ABSTRACT

Sport and exercise psychologists interested in examining perfectionism as a multidimensional characteristic will need to examine the interaction between its two dimensions; perfectionistic strivings and perfectionistic concerns. These are two dimensions that often have opposing effects. There are a number of ways to test and probe the interaction between the two. So far, researchers have relied upon pick-a-point analysis to probe interactions, often couched within the 2 x 2 model of perfectionism (Gaudreau & Thompson, 2010). However, one of the limitations of this analysis is that it tests the effects of perfectionistic strivings at only a small number of values of perfectionistic concerns and these values are typically arbitrary (e.g., plus and minus one standard deviation). In this presentation, an alternative analysis will be illustrated – the Johnson-Neyman technique. While this analysis has existed for some time, it is underutilized in sport and exercise psychology. One of the advantages of the Johnson-Neyman technique is that examines the effects of perfectionistic strivings at all values of perfectionistic concerns. In doing so, it can be used to identify “perfectionistic tipping points.” That is, the precise level of perfectionistic concerns at which the effects of perfectionistic strivings are altered. Perfectionistic tipping points are conceptual, statistical, and practical points of interest and a new way of considering for whom perfectionism may be problematic in sport and exercise. In addition to illustrating the technique, the results of secondary data analysis of published research will be presented that exemplifies different types of perfectionistic tipping points and their presence in existing research. Notably, this includes data examining athlete burnout, athlete

KEYWORDS

moderation; analyses; personality

engagement, emotional regulation, and how athletes respond to competitive failure, as well as perfectionistic tipping points that signal points at which perfectionistic strivings may be less more or less problematic. Based on this analysis, an important emerging finding is that most often even lower levels of perfectionistic concerns, typically below the mid-point of the response scale, influence the effects of perfectionistic strivings. In all, perfectionistic tipping points are a valuable way of conceptualizing the interaction between dimensions of perfectionism and sport and exercise psychologists are encouraged to consider them in their future work.

A quantitative approach to comparing preferred coach and athlete leadership behaviours using the leadership scales for sports

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ABSTRACT

Researchers have identified two key sources of leadership within sport teams: coaches and athlete leaders (i.e., athletes who occupy formal or informal roles and influence of a group of team members to achieve a common goal; Loughead et al., 2006). The Multidimensional Model of Leadership (Chelladurai, 1993, 2007) is useful for examining both coach and athlete leadership behaviors. The model theorizes that leaders will utilize three types of behaviors; those that are required, preferred, or perceived by their followers. To date, researchers have examined the perceived leadership behaviors of coaches and athlete leaders. Specifically, Loughead and Hardy (2005) compared athletes' perceptions of their coach and athlete leaders' leadership behaviors using the Leadership Scale for Sports (LSS; Chelladurai & Saleh, 1980). The authors found significant differences between coaches and athlete leaders for all five of the leadership behaviors measured by the LSS. However, it is possible that the perceptions of athletes are not reflective of the leadership behaviors they would prefer to receive from their coach and athlete leaders. Consequently, additional research is warranted comparing the preferred coach and athlete leadership behaviors so that leaders can understand their team members preferences in order to be a more effective leader. Therefore, the purpose of the present study was to compare the preferences for athlete leadership and coach behaviors. Participants included 193 kinesiology students who were all currently competing or had previously competed in sport. Participants were asked to rate their preferences for leadership behaviors using the coach- and athlete leader-versions of the LSS (Chelladurai & Saleh, 1980). The LSS measures five leadership behaviors: training and instruction, democratic behavior, autocratic behavior, social support, and positive feedback. The results from a repeated measures

KEYWORDS

leadership; athlete leadership; coaching; group processes

MANOVA showed a significant difference in preferences for athlete leadership behaviors and coach behaviors, $F(5, 189) = 41.10$, $p < .001$; Wilk's $\Lambda = .479$; partial $\eta^2 = .521$. Specifically, participants reported a greater preference for coaches to exhibit training and instruction ($p < .001$), democratic behavior ($p < .001$), and positive feedback ($p = .016$) more frequently than athlete leaders, and for athlete leaders to exhibit more autocratic behavior than coaches ($p = .002$). No significant differences were reported for social support. The present findings extend our understanding of how athletes prefer their leaders to demonstrate shared leadership. Researchers and practitioners can use these findings to create leadership development programs that optimize shared leadership between coaches and athlete leaders.

The effect of COVID-19 confinement on fundamental motor skills and goal content among Malaysian urban primary school children

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ABSTRACT

Introduction: One of the major and progressive causes in the prevalence of overweight and obese children is the decrease in fundamental motor skills (FMS) which is due to the lack of motivation during the COVID-19 pandemic period. The lack of FMS that can influence children participation in physical activity (PA) is important to improve their health and wellbeing. **Purpose:** The aim of this study was to investigate the level of fundamental motor skills and goal contents among Malaysian urban primary school children aged 10 to 12 years old using the Canadian norm during the COVID-19 confinement period. **Methods:** The participants were Year Four, Five and Six students ($N = 260 + .082$; male = 143; female = 117) from three urban primary schools in Sarawak. The Canadian Agility and Movement Skill Assessment (CAMSA) was used to measure the level of fundamental motor skills (jumping, sliding, catching, throwing, skipping, hopping & kicking) of the children from 3 urban primary schools in Sarawak, Malaysia. Whereas, the Goal Content for Exercise Questionnaire - Malay version (GCEQ; Chai et al., 2019) was utilised to assess goal contents (Social Affiliation, Image, Health Management, Social Recognition & Skill Development) pertaining to PA. Data were analysed by means of descriptive statistics and independent sample t-tests. **Results:** Overall, 99.7% of the children who participated in the assessment were unable to achieve the recommended level of the total CAMSA score, based on the Canadian norm of the total CAMSA score. In addition, no significant differences were found between gender for goal contents. **Conclusion:** It is recommended that the Institute of Teacher Education (ITE) develops an interdisciplinary

KEYWORDS

Fundamental motor skills; CAMSA; children; Malaysian; urban

approach that can train the trainee teachers in assessing and mastering the FMS teaching and learning methodologies in order to magnify the levels of PA in children.

Psychological profile of high achievers in sports

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ABSTRACT

When the pandemic struck the human race, it brought sports activity to a bare minimum. Yet like the proverbial “silver lining to every dark cloud”, the pandemic has given life a pause, enough for everyone to stop, think, reorient and rewire his/her capabilities. It has helped to consolidate, lift up, celebrate and hone human strengths, leading to psychological growth and excellence. Excellence is an important strength and virtue which when expressed and recognized revolutionizes life and helps one to reach the pinnacle of success without getting paralysed by the feelings of fear and self doubt. The aim of the present endeavour was to study Excellence in the field of Sports in relation to Grit, Perfectionism, Self-Efficacy, Flow and Emotional Intelligence. For this purpose, 100 university gold medallists in the field of sports within the age range of 20-26 years were selected as the sample. Out of the 100 gold medallists, 73 were males and 27 were females. The university players who top in their respective individual games were selected. Purposive sampling technique was used. The sample was collected from three universities- Panjab University (Chandigarh), Punjabi University (Patiala) and Guru Nanak Dev University (Amritsar). To measure Grit, the Short Grit Scale developed by Duckworth and Quinn (2009) was used. The Multidimensional Perfectionism Scale by Hewitt, Flett, Turnbull-Donovan and Mikail (1991) was used to measure three types of Perfectionism. Self-Efficacy was measured by Generalized Self Efficacy Scale by Schwarzer and Jerusalem (1995). To measure Flow, the Flow State Scale-2 by Jackson and Eklund (2004) was used. Emotional Intelligence was measured by using The Emotional Intelligence Questionnaire, developed by Mohan, Malhotra and Mangla (2003). The raw scores were analyzed using appropriate statistical analyses viz. Descriptive statistics, t-test, Analysis of Variance, Inter-Correlation analysis and Stepwise Multiple Regression analysis. The results revealed gender differences with females scoring higher on Grit dimensions viz. Consistency of Interest, Perfectionism dimensions viz. Self-Oriented Perfectionism, Perfectionism, Flow dimensions viz. Action-Awareness Merging and Emotional Intelligence and males scoring higher on Flow dimensions viz. Concentration on Task at Hand. Further, significantly positive correlations were reported between Grit, Perfectionism, Self-Efficacy, Flow and Emotional Intelligence, highlighting their contribution as predictors. The study has helped to delineate the predictors of excellence which can be inculcated and honed to pursue excellence. In the present

KEYWORDS

Excellence in Sports; High Achievers; Grit; Perfectionism; University students

pandemic scenario, where active sports life is being held up, this pause can be fully utilised for psychological training for excellence.

Understanding the movement-specific reinvestment dimensions from personal characteristics perspectives

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ABSTRACT

According to the theory of reinvestment (Masters, 1992;), the performer's attempts to consciously monitor and control the mechanics of movements (i.e., reinvestment) could disrupt relatively automated motor processes if conscious monitoring and control mechanisms are employed improperly. The present study aimed to understand the two dimensions of the movement-specific reinvestment in detail. To this end, the purposes of the study were twofold: a) to examine the appropriateness of dichotomization of the movement-specific reinvestment responses and b) to elaborate how individual's tendency for reinvestment is associated with relevant psychological concepts. Participants were 328 undergraduate students (167 men, 161 women; Mage = 21.8, SD = 1.8) who participate in sports frequently. The Movement Specific Reinvestment Scale (MSRS; Masters et al., 2005) was employed to measure individual's tendency for reinvestment. After examining the factor structure of the movement-specific reinvestment responses based on confirmatory factor analysis (CFA) and exploratory structural equation modeling (ESEM), latent class factor analysis was conducted for the first purpose. Correlation analysis and mediation analysis were conducted for a sub-sample for the second purpose. Neither the 2-factor CFA nor ESEM model consisting of the original 10 items fit the data satisfactorily. However, both 2-factor CFA and ESEM models without Item 2 fit the data very well. Through a series of latent class factor analysis, three classes were identified. The patterns of the item-average scores for the two movement-specific reinvestment dimensions were parallel among the classes. Correlation analysis revealed that Conscious Motor Processing was positively associated with mental toughness, intrinsic regulation, integrated regulation, mastery-approach and task goal orientations, and dispositional flow, whereas Movement Self-Consciousness was positively related with stress, mastery-avoidance goal orientation. Based on the results of correlation analysis, only vitality was significantly associated with both MSRS dimensions. Therefore, a mediation analysis was conducted for the association between vitality and flow by using the parallel multiple mediator model, in which multiple mediators are not directly related to each other. It was found that the association between subjective vitality and the frequency of flow experience in sport was negatively affected by the higher propensity of Movement Self-Consciousness. The findings of the study supported the practice of dichotomization

KEYWORDS

Disposition; Reinvestment;
Latent class factor analysis;
Mediation analysis

of the movement-specific reinvestment responses, and indicated that at the trait level, Conscious Motor Processing and Movement Self-Consciousness were associated with positive and negative psychological constructs, respectively.

From surviving a traumatic accident to becoming a leader in society through sport: an explorative case study of a disabled sled hockey player from an ACT perspective considering success in sport in the context of career transitioning and global mental health prevention

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ABSTRACT

Although Acceptance and Commitment Therapy, as the third wave therapy, reached high popularity among sport psychology professionals worldwide, there is a lack of research exploring understanding of how ACT framework can be used not only for performance enhancement but also for finding personal fulfilment and meaning through succeeding in elite sport, while winning in sport is not the final goal but a vehicle towards realization of values-oriented goals that exceed one's sport career. This case study examines an experience of a military veteran (age: 36), a victim of a traumatic accident, who, from an ACT perspective, found a new meaning in life through playing adaptive sport (sled hockey) on an elite level as a way to better and easier disseminate mental toughness insights he acquired through his personal experience. The data was collected through an open interview surrounding themes of resilience, meaning, and goals. The author found that the athlete, even though not consciously utilizing an ACT framework in his journey, proceeded through the main ACT steps to achieve a new meaning in his life. After his accident and having his legs amputated, the athlete was defused from feelings of hatred and being hurt, let go of physical pain through mindfulness, and accepted the fact that the accident was a result of an irresponsible behavior of others. The athlete then gained a new direction through well understood personal values and committed himself to success in sled hockey, a platform through which he plans to share his story to empower others to face and embrace hardships. This perspective, available any elite athlete, in which sport is not a destination but a vehicle to something that exceeds one's sport career, can lead to two possible practical implications; 1) elite athletes often terminate their careers without a clear vision of post-career goals that would foster fulfillment; therefore, this approach of seeing sport as a "vehicle" can help them work towards a fulfilling life off the field, and 2) elite athletes, given their characteristics, mental abilities, and high amount of fans or spectators, have the potential to become leaders in society that experiences

KEYWORDS

Acceptance & Commitment Therapy; meaning; Career Transitioning; Global mental health prevention

difficulties of the modern world, which seems to reflect in increasing mental health issues in general population. Practical implications and suggestions for navigating an athlete towards value-oriented pursuit of success in sport, suggestions for further research, and limitations of this complex perspective from a consulting point of view are discussed.

Sport courage in relation to depression-anxiety-stress, self-confidence, self-control/self-management, psychological vulnerability and sport performance

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ABSTRACT

Understanding of the relationship between sport courage in relation to depression-anxiety-stress, self-confidence, self-control self-management, psychological vulnerability and sport performance including various individual variables are still unknown. Therefore, purpose of this study focus on this research gap. Data were collected from 292 sport participants (Male = 109 and Female = 179) aged 18 to 40 (Mage = 21.59 ± 3.87 and Mexperience = 5.71 ± 4.84 yrs.) administered validated Sport Courage Scale-SCS-31 (Konter & Ng, 2012), Depression Anxiety Stress Scale-DAS (Akin & Çetin, 2007), Self-Confidence Scale-SC (Akin, 2007), Self-Control Self-Management Scale-SCSMS (Akin, Demirci & Çardak, 2012), and Psychological Vulnerability Scale-PVS (Akin & Eker, 2011) with the personal information form including individual (age, gender, education, childhood happiness), and sport performance (sport experience, level of sport participation, representing school team, being selected national athlete, attributions to success and failure) variables. SCS-31 consists of five subscales; Mastery-MT, Determination-DT, Assertiveness-AT, Venturesome-VS and Sacrifice Behavior-SB. DAS has three factors comprising the Depression-DEP, Anxiety-ANX and Stress-ST. SC consists of two factors; intrinsic self-confidence-ISC and extrinsic self-confidence-ESC. SCSMS contains three factors; self-monitoring-SM, self-evaluation-SE and self-reinforcing-SR. Finally, PVS is a unidimensional scale. Collected data was analyzed by correlations, Multivariate Analyses, Kruskal-Wallis and Mann-Whitney U tests. Results indicated that: 1-Males have significantly higher scores of DT, AT, VS, SB and SCS-31 Total than females ($p < .05$). 2-Experience has significantly positive and low correlations with DT ($r = .202, p < .015$), VS ($r = .205, p < .027$), SB ($r = .183, p < .028$) and SCS-31 Total ($r = .183, p < .028$). 3-Formal Education has significantly positive and low correlations with DT ($r = .124, p < .035$), AT ($r = .182, p < .022$) and SCS-31 Total ($r = .133, p < .023$). 4-SCS-31 Total has significantly negative and low correlations with DAS Total ($r = -.351, p < .001$) and PVS Total ($r = -.216, p < .001$). 5-SCS-31 Total has significantly positive and low to moderate correlations with SC Total ($r = .585, p < .001$) and

KEYWORDS

Sport Courage; Depression-Anxiety-Stress; Self-Confidence; Self-Control; Sport Performance

SCSMS Total ($r = 392$, $p < .001$). 6- Participants attributing their success to ability have significantly higher scores of MT and SCS-31 Total than participant attributing their success to effort, chance and easy task ($p < .05$). 7-Participants with the perception of good childhood have significantly higher scores of MT, AT and SCS-31 Total ($p < .05$). 8- 1-Participants representing the school teams in various sports have significantly higher scores of MT, DT, AT, VS, SB and SCS-31 Total than none-school teams participants ($p < .05$). 9-Professional sport participants have higher points of MT and AT than amateur sport participants. Overall, sport courage factors seem to be important in relation to indicated scales, individual and sport performance variables. Research is needed for more conclusive results.

Facilitators and barriers confronting canadian first nations sport coaches along their coaching paths

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ABSTRACT

The Truth and Reconciliation Commission of Canada (TRC) called "upon the federal government to amend the Physical Activity and Sport Act to support reconciliation by ensuring that policies to promote physical activity as a fundamental element of health and well-being, reduce barriers to sports participation, increase the pursuit of excellence in sport, and build capacity in the Canadian sport system, are inclusive of Aboriginal peoples" (Call to Action #89; TRC, 2015, p. 10). Canadian Heritage (2005) highlighted a lack of Indigenous (First Nations, Métis, and Inuit) coaches nearly two decades ago, yet to date there has been limited research examining the factors influencing Indigenous coaches in their coaching paths. Focusing specifically on First Nations coaches, this research asked, "What are the factors influencing the coaching paths of First Nations coaches in Canada, and what are some strategies for improvements?" Following Wilson's (2001) Indigenous research paradigm and using a socioecological framework based on the work of Bronfenbrenner (1977) and used in similar research (Bennie et al., 2019), we engaged 10 First Nations coaches in conversations related to this topic. Some of the many facilitators discussed included coaches' resilience; support from peers, family members, and organizations; opportunities for coach development; teaching roles through which teachers are provided coaching positions; previous experience as athletes; lessons learned from First Nations cultures (e.g., community cohesion); and a knowledge of both Indigenous and Western approaches to sport. Some of the many barriers discussed included dealing with the pressure of a winning-oriented focus; opportunities for relationship-building with peers, mentors, athletes, and others; high workloads; lack of support from organizations; racism; geographic isolation of First Nations communities; and limited (especially female) Indigenous

KEYWORDS

Canada; First Nations; coaches; sport

representation in sport spaces. Some of the recommendations for change that were discussed included more coaching clinics in First Nations communities; garnering more support from organizations; and growing the club sport system to compensate for weaknesses in the school sport system. Results of this research can be helpful in addressing TRC Call to Action #89, and they can also be used more generally to help organizations seeking to promote the inclusion of First Nations people in coaching roles.

“They are the reason i am who i am”: examining the developmental networks of elite sport coaches

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ABSTRACT

Despite evidence that coach mentoring is an important type of developmental relationship, scholars have advocated that there are other developmental relationships that play an important role in a person's personal growth and development, indicating that mentoring is part of a larger developmental picture. Accordingly, the developmental network perspective proposes that people acquire a wide and diversified network of concurrent developmental relationships, such as mentors, who assist their personal and professional development. The purpose of this study was to qualitatively examine the developmental networks of experienced elite sport coaches to identify their developmental agents (DAs), the outcomes resulting from these developmental relationships, and the type of developmental assistance provided by the DAs. Participants were nine experienced elite head coaches from a variety of sports ($M_{age} = 50.22$, $SD = 10.56$) with an average of 21.44 years of coaching experience at the university, professional, and/or national levels. Data were acquired during a single interview with each participant via a two-step process: (1) constructing visual representations of participants' developmental networks, which were subsequently used to guide (2) semi-structured interviews. During the interviews, participants identified a total of 197 DAs with participants' networks ranging between 12–39 DAs ($M = 22$). Using Braun et al.'s (2016) guidelines for thematic analysis, the findings indicated that coaches had a vast network of developmental relationships, such as coaches, athletes, management, and family. Collectively, these DAs contributed to their development on a personal (e.g., core values) and professional (e.g., coaching knowledge, employment opportunities) level, which spanned the sport-specific, interpersonal, and intrapersonal domains of knowledge. Furthermore, DAs facilitated the acquisition of developmental outcomes by providing intentional and unintentional forms of assistance, such as feedback, guidance, advice, and role modelling. Lastly, the participants also emphasized their role as

KEYWORDS

Mentoring; Sport Coaching;
Coach Learning; Professional
Development; Elite Sport

active agents in their own development by intentionally seeking out sources of information and reflecting on the information disseminated from their DAs. This study adds to the growing body of literature that suggests people learn and develop with the assistance of multiple developmental relationships. In addition, the findings indicate that elite coaches' developmental networks were vast and varied. According to the concept of network diversity, acquiring developmental assistance from various sources offers the possibility of new ideas and perspectives, which fosters knowledge acquisition, skill development, and career advancement. Thus, developing coaches are encouraged to surround themselves with a variety of DAs, inside and outside of sport, to enhance their growth and development.

A mixed-methods examination of a season-long mental health awareness program for elite male adolescent hockey players

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ABSTRACT

In partnership with the Canadian Mental Health Association, Ontario Division, the purpose of this study was to evaluate the effectiveness of a season-long mental health and suicide-awareness program that was delivered to elite adolescent male hockey players and their support staff. The program was a comprehensive multi-faceted mental health and suicide-awareness program to help educate, support, and raise awareness about mental health. The evaluation of this program was implemented using Kirkpatrick's four-level (reaction, learning, behaviour, results) model of program evaluation. The study was conducted using a sequential explanatory mixed-methods design, which began with a quantitative phase and was followed by a qualitative phase. In total, 105 participants (49 athletes, 56 staff) completed online questionnaires and 12 participants participated in qualitative interviews. The quantitative findings revealed that 78% of athletes and 90% of staff reported high levels of satisfaction with the program, 85% of athletes and 87% of staff felt as though they acquired knowledge on mental health including access to resources, and 68% of athletes and 87% of staff felt they could provide more effective support to individuals with mental health issues. According to the qualitative findings, participants felt the program helped them learn how to identify, approach, and support someone experiencing mental health issues. Additionally, participants who were part of the program reported lower levels of personal stigma in comparison to levels of public stigma towards persons with mental health problems. Overall, findings suggest a high level of acceptability and

KEYWORDS

Elite Sport; Stigma; Suicide Prevention; Program Evaluation; Ice Hockey

openness to a mental health awareness program among elite male adolescent athletes. Given that this group typically holds negative attitudes towards mental health, the current results showing the hockey players' receptivity to this program are promising for the future development and implementation of programs among groups with similar or higher levels of stigma. In addition, the clear benefits of the program in participants' increased knowledge of mental health problems, appropriate help-seeking, and available resources, as well as improved support for athletes suggests that the provision of similar programs for youth athletes could be worthwhile. With this in mind, suggestions for future iterations of this program from a research and applied perspective are provided.

Analysis System for Emotional Behavior in Football (ASEB-F): matches of fc red bull salzburg without supporters during the COVID-19 pandemic

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ABSTRACT

Games without supporters ("ghost games") during the COVID-19 pandemic represent a unique opportunity to study the effects of the (missing) audience on emotional behavior. The present study is the first of its kind to directly address these psychological effects on players, staff and officials by analyzing their (nonverbal) behavior during the matches. Originating from the work of i.a., Lazarus, Eaves and Leathers we created a new categorial analysis system, which assumes that emotions can be observed and described as an organized psychophysiological reaction to specific events in the environment, rising to overt actions and leading to human (nonverbal) behavior. This newly developed "Analysis System for Emotional Behavior in Football" (ASEB-F) was used to video-analyze the behavior of players, staff, and officials in 20 games of FC Red Bull Salzburg of season 2018/19 ("regular games") and season 2019/20 ("ghost games"). There were 19.5% fewer emotional situations in "ghost games" than in "regular games", corresponding to a medium to large effect size ($t(18) = 2.022$, 95% CI [-0.191, 9.991], $p = .058$, $r = .430$). Results show a relative increase in the number of emotional behaviors "Self-Adaptor" (+0.8%), "Protest" (+4.2%) and "Fair-Play-Behavior" (+3.1%) in "ghost games", whereas "Words Fight" (-5.1%) and "Discussion" (-5.1%) decreased in "ghost games". Referees were actively involved in 39.4% of all documented emotional situations in "regular games", whereas in "ghost games" referees were actively involved in only 25.2% of all documented emotional situations (-14.2%), corresponding to a statistically significant difference and a large effect size ($t(18) = 3.071$, 95% CI [-1.517, 8.083], $p = .007$, $r = .586$). Chronological analysis within games – from kick-on to kick-off – additionally shows a noticeable shift of

KEYWORDS

emotions; soccer; players; no fans; covid-19

accumulated "Discussion" behavior from second half (in "regular games") into the mid of the first half in "ghost games", resulting in a cluster of "Protest" and "Discussion" behavior. We conclude that without the external factor of supporters, players and staff acted more factually and got less carried away with longer lasting and extensive word fights and discussions. Results further suggest that "ghost games" not only have an impact on the total number of displayed emotional behavior but might also play a role in the temporal distribution of displayed emotions.

Manage diamond: the novel application in sport psychology practice at high performance setting

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ABSTRACT

The art of sport psychology can be best described as converting potential into consistent performance through maintaining the process & monitoring the progress of an individual. The philosophy of "controlling the controllables in the process" is a common concept introduced by various sport psychology practitioners in the performance discipline. Among the creative application of the "control" concept in sport psychology domain are the Control Map and the Control Triangle, developed by Dr. Martin Turner and Dr. Carla Meijin, which were formally documented in the blog of The Smarter Thinking Project. Through exploring the potential implementation of both tools in the high performance sports setting in Malaysia, the Manage Diamond was being developed, introduced and administered among the athletes and coaches. Sharing some of the components of the Control Triangle, which contains the factors of "performance environment", "your performance" and "opposition" at each tip, this current approach included another element, known as the "situational" factor (emphasizing on the prospective situation that might occur during the events) into the three existing performance factors to form the novel Manage Diamond. It was scientifically supported that controlling the controllables is vital as part of an athletes' performance process, however being able to manage control of the relevant factors could also be an important antecedent to sporting performance and being identified as one of the most influential differentiators in facilitating or debilitating success. The application of the Manage Diamond can be two-fold, it can function as part of a quantitative approach (evaluation), and by integrating qualitative element (exploration) during its implementation. Relevant case studies of administering the Manage Diamond with the Olympic national sailing team in their preparation towards Tokyo 2020 and the national lawn bowling athletes towards their Gold medals pursuit in the upcoming 2022 Birmingham Commonwealth Games will be presented. It was identified that the Manage Diamond can be a valuable monitoring equipment in the sport psychology

KEYWORDS

Control; Manage Diamond;
Elite Sport; Situational

evaluation toolbox and a useful addition to the common applied sports psychology practice in elite sports setting, especially during the unprecedented event of the Covid-19 pandemic. It can generate individualized information with tangible data that might help the sport psychology practitioner to further explore the relevant influence of each factors on the athletes' performance.

A confirmatory factor analysis of the malay language Sport Motivation Scale-II (SMS-II) among adolescent Malaysian athletes

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ABSTRACT

The study aimed to validate the Malay language version of the Sport Motivation Scale-II (SMS-II) using confirmatory factor analysis (CFA). SMS-II is a widely used scale for assessing an athlete's motivation. Since its inception, the questionnaire has been translated and validated in several languages which demonstrated good divergent validity and internal consistency. However, we found no Malay language version used for examination among the Malaysian population. The data were collected from adolescent Malaysian athletes across 23 different sports. A total of 436 athletes participated in the study (males 68.6%, females 31.4%), with a mean age of 16.44 (SD = 1.22). A standard forward-backwards translation was performed to translate the 18-items SMS-II from the original English version. All the participants completed the SMS-II Malay version questionnaire. The results of the initial hypothesised model of the SMS-II Malay version displayed an acceptable good fit to the data (RMSEA = 0.056, CFI = 0.906, TLI = 0.880, SRMR = 0.064). Subsequent model modifications included correlation between the items' residuals within the same factor, resulting in good fit indices (RMSEA = 0.053, CFI = 0.923, TLI = 0.895, SRMR = 0.062). The final measurement model comprised all 18 items of the Malay language SMS-II. The internal consistency coefficients measured by Cronbach's alpha were 0.718 for intrinsic, 0.734 for integrated, 0.752 for identified, 0.462 for introjected, 0.617 for external, and 0.526 for amotivation. All factors had Cronbach's alpha exceeded 0.50 except for introjected regulation. Therefore, further studies are needed to improve the reliability of some factors in the scale. Overall, the results indicated that the Malay language of SMS-II could be used to assess the level of motivation among adolescent Malaysian athletes.

KEYWORDS

Sports; motivation; athletes; Malaysian; factorial validity

Expertise influences congruency monitoring during action anticipation

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ABSTRACT

Congruency monitoring of action occurs in individuals with relevant motor experience during action anticipation. Also, motor experience plays an important role in the ability to anticipate action outcomes, but little is known about the brain processes through which it modulates the congruency monitoring during action anticipation, especially for unexpected events. Here, we examined the behavioral performance and electrophysiological brain activity of individuals with and without domain-specific expertise when judging the action congruency of occluded video clips of a snowboard halfpipe trick and table tennis serves. In study 1, fifteen elite snowboarding halfpipe athletes aged 16–27 years (mean 20.07 ± 3.84 years; 9 women) from China's national team were recruited as the expert group, and 15 college students aged 18–25 years (mean 19.47 ± 1.88 years; 8 women) were recruited as the control group. After watching 1500-ms video clips displaying a snowboarding halfpipe trick, the participants were asked to judge the congruency between this clip and the flow-up picture. In study 2, twenty-six elite table tennis players were recruited from provincial teams to form the expert group, and 23 college students with no experience in reactive-sport skills were recruited as the control group. They were asked to judge the congruency between the model's body kinematics and subsequent ball trajectory. The behavior results showed that the experts (both the snowboarding halfpipe athletes and table tennis athletes) were more accurate in judging the congruency between the predicted outcome and the actual outcome, with the higher d-prime comparing with the controls. Furthermore, the experts also exhibited elevated theta oscillations during the incongruent relative to the congruent condition while no such differences were observed in the controls in both studies. Lastly, the source estimation for theta activity was conducted for these two studies. In Study 1, source reconstruction revealed the activation in the board frontal regions and middle temporal gyrus for experts. While, in Study 2, the revealed stronger activation in the middle frontal gyrus for the experts in response to the incongruent trajectories. Collectively, the observed differences in behavior and cortical dynamics between the groups suggest that congruency monitoring is modulated by individual expertise. Expertise generates monitoring-related neural activity before ensuing potential incongruency, helping to match observed and expected action outcomes.

KEYWORDS

congruency monitoring; theta oscillation; action outcom; anticipation

The student-athlete volunteer experience: an investigation of a university athletics-community sports partnership

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ABSTRACT

Civic engagement is a key component in promoting a healthy and positive transition from adolescence into adulthood. Volunteering is an example of civic engagement that has been associated with a wide range of benefits for youth including the acquisition of developmental assets (e.g., empowerment, interpersonal competence). Within the Canadian university sports context, athletics departments are increasingly engaging with community organizations to promote sport participation, while simultaneously providing student-athletes with volunteer opportunities aimed at developing well-rounded and civically engaged young adults. The purpose of this study was to examine a University Athletics department-community sport program located in Ontario, Canada. As one of the main objectives of this program is to provide quality volunteer opportunities for student-athletes, exploring the experiences of early-adopting athletes is worthwhile. This study adopted semi-structured interviews with current student-athlete volunteers (n = 10) to explore their perceptions and experiences within the program. Interviews were audio-recorded, transcribed verbatim, and thematically analyzed. The volunteers emphasized a variety of motives for their involvement including the opportunity to give back, positively impact aspiring youth athletes, and engage in a program that aligns with their passions, values, and interests. Importantly, participants described how the program benefitted not only themselves, but also youth athletes, the institution, and the community more generally. At the individual level (i.e., volunteer), the program served as an opportunity to be viewed as role models and develop sport-specific (e.g., coaching) as well as transferable knowledge and skills (e.g., leadership). At the interpersonal level, the program assisted in developing youth athletes' sport-specific skills, provided additional sport opportunities, and assisted in fostering reciprocal, supportive relationships between the youth athletes and volunteers. At the institutional/community level, the program enhanced the University's community outreach, credibility of the University and community sport programs, and fostered a greater sense of connection and identity between the two. Finally, the volunteers discussed a variety of enablers (e.g., feeling valued) and barriers (e.g., logistical challenges) to volunteering in the program. To conclude, this study highlights an array of benefits associated with volunteering in the university sport setting and enhances our understanding of what constitutes a high-quality student-athlete volunteer experience. Moreover, recommendations are advanced to enhance the program's quality to benefit the volunteer, youth athletes, and institution/community.

KEYWORDS

Volunteerism; Quality Participation; Student-Athlete; Community Involvement; Sport

Shared mental models and team mental models in esports teams

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ABSTRACT

SMM is a term which indicates the amount of task – relevant knowledge structures possessed by group members. SMM enable the members to precisely describe, explain, and anticipate common task and group demands, and in return coordinate and adjust their actions and behavior to these demands to accomplish a given task. This study aims at examining whether the shared knowledge insights from I/O Psychology, Military, and Sports can be applied in the same manner in Esports, a domain that is increasing in importance worldwide. To meet this aim, a qualitative study was carried out, incorporating semi-structured interviews of eight “Fortnite” players ($M = 19.25$ years, $SD = 4.09$) from the leading Israeli teams, during the Israeli National “Fortnite” championship. Particular emphasis was placed on effective channels of communication among teammates, coordination of their tasks, how team decisions are made, strategy building methods, and shared knowledge amongst team members during practice and official tournaments. The data was analyzed inductively using a thematic analysis to create an explanatory model of how elite Esports teams function with an emphasis on shared mental models (SMM). Eleven main themes emerged from the interviews: Experience, Achievements, Communication, Strategies, Nature of Practice, Decision making, Division of Labor, Coordination, Values, Perception of Success and Perceptual Cognitive dimensions. The findings indicate that Esports team members possess shared mental models and team mental models. The unique expression of SMM in Esports and their use are discussed. More research aimed at validating the current model is suggested, as well as for examining the formation of SMM in Esports, and its impact on performance. Developing an assessment tool for measuring SMM in Esports teams is also being elaborated on.

KEYWORDS

Shared Mental Models; Esports; Esports Teams; Fortnite

Youth sport dropout according to bronfenbrenner’s Process-Person-Context-Time (PPCT) model

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ABSTRACT

Sustained, developmentally appropriate, participation in youth sport can provide physical (e.g., reduced risk of obesity, improved metabolic profiles, increased muscular strength), psychological (e.g., improved self-esteem, decreased risk of depression) and motor skill benefits. However, research suggests a substantial proportion of youth will either temporarily or permanently dropout of sport at young ages (10 & 11 years) and within short time frames, reducing the likelihood of health attainment benefits important to help prevent dropout and maintain health benefitting participation. Examined from Bio-Ecological System

KEYWORDS

Youth Health; Adolescent Health; Sport Attrition; Sport Cessation

Theory's PPCT model perspective (Bronfenbrenner & Morris, 2006), the purpose was to systematically examine how youth sport dropout literature has been theoretically framed; how dropout has been defined and measured; and, systematically map the myriad of factors examined which have (not) affected dropout across and within youth sport. Peer-reviewed literature (N = 69 studies) published over four decades (1980-2021) was identified within five databases and synthesized using a mixed-methods review approach. Studies were included if they were: (i) empirical (qualitative or quantitative) research published in a peer-reviewed journal between 1980 until January 2021 (inclusive); (ii) focused on children and adolescents between mean ages of 5-19 years (inclusive); and (iii) explicitly examined dropout within youth sport contexts. The Mixed Methods Appraisal Tool (MMAT version 2018) was applied to appraise study quality. Findings identified prior studies predominantly adopted psychological-based theoretical frameworks; didn't define dropout; assessed dropout descriptively, and often focused upon the influence of psychological-based factors. Prior studies examined single or multi-sport (male and female) youth sport contexts worldwide, at different participation levels, although predominantly local club-level. Across contexts some consistent influential factors to dropout were: relative age, competition structures (Process), sex, competence perception (Personal), parental socio-demographics (Context). While applying a PPCT lens, systematic examination of youth sport dropout literature suggests potential for multiple and possibly common independent (& likely interactive), dynamic over time factors can influence dropout. Future studies need to apply more encompassing (social-ecological) theoretical frameworks; better dropout definitions; better measures of dropout which standardise for time periods of examination; and, apply more advanced assessment methods. Such improvement will determine more accurate estimates of (ab-)normal dropout rates, and help sporting/health organisations better evaluate the impact of strategies/policies interested in sustaining youth sport participation.

“Future work should be completed with female participants and women”: a decade-long review of the sport psychology literature

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ABSTRACT

INTRODUCTION: Researchers representing a range of disciplines have identified a need to include a diversity of participants in future projects and studies. Specifically, it has been noted that the historical lack of female participants, women, and girls across many scientific domains has the effect of stifling the production

KEYWORDS

Female athletes; Women's sports; Girls' sports; Diversity and Inclusiveness; Review

of new, critical knowledge specific to these populations while simultaneously perpetuating existing inequalities across sex and gender-based lines. Overall, the lack of attention given to these populations can have the effect of silencing, excluding, and further devaluing the perspectives and abilities of female individuals' as well as individuals identifying as women and girls. **PURPOSE:** While several studies have examined sex and gender-based inequities within a wide-range of academic disciplines—including medicine, business, and technology—little work has been conducted in assessing the state of the literature in sport psychology. As such, the purpose of this review is: (a) To render visible the amount as well as the type of research previously published with female participants, women, and girls during the last decade and (b) to identify future directions that might aid in addressing inequities found in sport psychology related to female participants, women, and girls. **METHODS:** Five prominent journals within the sport psychology literature were selected for the basis of this review. All articles published between the dates of January 2010 and December 2020 in each journal were downloaded to be coded by the project's research team. Articles were retained if they were empirical in nature (i.e., reported methods and results) and excluded if they were not (i.e., position papers, book reviews, letters to the editor). Following this, twenty specific pieces of information were identified and extracted from each article including: study purpose, research method, sports explored, and various participant characteristics. **RESULTS:** In total, 2,273 articles of a possible 2,755 were included in the final analysis. Of these, 1,676 included a mix of male (men) and female (women) participants, 375 included only male participants, and 222 included exclusively female participants. All meaningful discrepancies encountered between articles with an exclusively male and an exclusively female sample were recorded and compared in full. **CONCLUSION:** Concerningly, it is evident that fewer studies have been completed exploring outcomes associated with female athletes than male athletes over the previous decade. To remedy this discrepancy, it is recommended that researchers more readily design and take up projects that might purposefully explore the female sporting context in the future.

Examining associations between self-conscious emotions and implicit and explicit attitudes towards sport

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ABSTRACT

Adolescents disengage from sport at higher rates compared to any other age group. Recent research indicates that higher levels of drop out at this age might relate to adolescents' affective response to the sport environment, whereby, elevated levels self-conscious emotion propensities (i.e., pride and shame) are

KEYWORDS

Shame; Pride; sport enjoyment; structural equation model

predictive of adolescents' explicit attitudes (i.e., enjoyment) toward sport. However, according to the affect and health behaviour framework, to better understand adolescent sport engagement, we must also consider implicit attitudes. The purpose of the current study was to examine the relationship between self-conscious emotion propensities and explicit and implicit attitudes towards sport, and whether age and gender relate to these constructs. Among 162 adolescents' (12-18 years old), we measured self-conscious emotion propensities (i.e., fitness related shame and pride), explicit attitudes using the Sport Enjoyment Questionnaire, and implicit attitudes towards sport using the Implicit Association Test. A structural equation model accounting for age and gender demonstrated good model fit $\chi^2(78) = 114.72$, $p = .004$, $RMSEA = .05$, $CFI = .97$, $NNFI = .95$. The model indicated that higher levels of fitness pride related to higher enjoyment towards sport, $\beta = .19$, $se = .03$, and higher levels of fitness shame related to worse implicit attitudes towards sport, $\beta = -.20$, $se = .08$. Overall, results might reflect differences in when self-conscious emotions are most relevant, whereby pride is more relevant when reflecting on experiences in sport, however shame is related to implicit attitudes elicited from the sport context. This research highlights the need for further exploration into the timing of when self-conscious emotions are prevalent in sport, and how they impact explicit and implicit attitudes towards sport.

Embodied planning: on the development of motor and cognitive planning

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ABSTRACT

Action planning is equally important for children and adults. Goal-directed actions can only be successfully completed if the different planning steps required are thought out and carried out in the correct order. The respective planning prerequisites, both cognitive and motor, develop during infancy and are accompanied by rapid bodily changes. To investigate the development of motor and cognitive planning, we proposed an integrative construct of embodied planning and specified developmental hypotheses. The concept of embodied planning integrates motor and cognitive planning processes and can be understood as an 'online' dynamic and continuous feedback loop between motor and cognitive planning. In this study, we examined how embodied planning in climbing develops from childhood to young adulthood. In this experiment, a total of $N = 104$ participants aged between 6 and 32 years took part ($M_{age} = 176.85$ months, $SD_{age} = 80.58$). We built an innovative climbing laboratory and designed a new paradigm to assess embodied planning in climbing. Climbing naturally involves embodied planning: To climb successfully, one must plan which route to take - which holds to use and in which order (the cognitive

KEYWORDS

action; climbing; motor development; cognitive development; embodiment

component), as well as evaluate how to execute the route (motor component). In the laboratory, three experimental climbing tasks were created targeting the different planning demands accordingly (cognitive, motor, cognitive-motor). Results of regression analyses revealed that age significantly predicted the number of holds used ($\beta = -.68$, $R^2 = .46$) and the total time to complete the route ($\beta = -.49$, $R^2 = .24$), but not the initial planning time. To examine the hypothesized developmental trajectory, we inspected the slopes for the different age groups. As hypothesized, planning improved between 6 and 8 years of age (intakes: $\beta = -.44$, total time: $\beta = -.49$), but did not change significantly thereafter (during later childhood, adolescence, and young adulthood). Compared to the state of the art on planning, the results on embodied planning align to the developmental trajectory of motor planning. However, an improvement of embodied planning up to young adulthood does not emerge, as was expected from evidence on cognitive planning development. In a future study, the relation between measures of embodied planning in climbing and general planning (Tower-of-London) will be examined to validate the developmental trajectories of embodied planning. In addition, training studies targeting different aspects of embodied planning will shed light on the contribution of motor and cognitive planning in climbing and on intra-individual changes.

Youths participation motivation in physical activity

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ABSTRACT

Introduction: Motivation is a crucial aspect in youths participating in physical activity (PA) for better developmental, mental health, and well-being. **Purpose:** This study aimed to examine the participation motivation within the Malaysian context. The participants comprised of 540 youths aged between 17 to 23 years old ($1.45 \pm .50$). **Methods:** The Physical Activity and Leisure Motivation Scale – Malay (PALMS-M: Kueh, Kuan & Morris, 2017) was used to measure 8 motives (physical condition, mastery, affiliation, psychological condition, appearance, enjoyment, others' expectations and competition/ego) of participation in PA. Descriptive analysis, two-way ANOVA and Pearson's product-moment correlation were conducted in the study. **Results:** Two-way ANOVA was used to examine the effect of gender and age groups, and ethnicity in PALMS. The main effect of gender was significant on competition-ego, $F = 23.50$, $p < .001$, appearance, $F = 3.83$, $p = .05$, others' expectations, $F = 11.14$, $p = .001$, affiliation, $F = 5.77$, $p = .017$, mastery, $F = 5.60$, $p = .018$, and enjoyment, $F = 7.04$, $p = .008$. Furthermore, the main effect of age groups was significant on others' expectations, $F = 4.12$, $p = .043$, physical condition, $F = 8.96$, $p = .003$, psychological condition, $F = 12.50$, $p = .003$.

KEYWORDS

Youth; Participation motives; Physical activity; PALMS-M

< .001, mastery, $F = 9.55$, $p = .002$, and enjoyment, $F = 11.64$, $p = .001$. On the other hand, the main effect of gender was statistically significant on competition-ego, $F = 17.00$, $p < .001$, appearance, $F = 4.52$, $p = .034$, others' expectations, $F = 8.93$, $p = .003$, others' expectations, $F = 8.93$, $p = .003$, affiliation, $F = 6.60$, $p = .01$, mastery, $F = 7.25$, $p = .007$, and enjoyment, $F = 9.25$, $p = .002$. Additionally, the main effect of ethnicity was significant on competition-ego, $F = 7.41$, $p = .007$. The findings showed statistically significant positive relationship between the variables in PALMS-M ranging from very weak (.14) to very strong (.87). Conclusion: Adaptive intervention should facilitate the intrinsic and extrinsic motives of the youths that can lead to a higher sustainable autonomous motivation in their participation in PA.

A personal approach to exam the relationships between paternalistic leaderships, motivation and athletes' well-being

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ABSTRACT

Purpose: The purposes of the present study were to explore the influences of the specific paternalistic leadership style of sports coaches on athletes' motivation and well-being related variables. Without argument, sports coach as a team leader was considered a significant other to impact athletes' sports involvement. However, literature on specific paternalistic leadership style on such issue did not agree. **Methods:** cross-sectional design and survey study were used. The present study was aimed to focus on paternalistic leadership style to team sport players' motivation and well and ill-being related variables from basketball, baseball, volleyball, handball, football and softball team. After subject consents were granted, study participants were asked to conduct a battery of questionnaires anonymously. Two hundred forty-one team sport athletes were involved in this study (male = 61%). **Results and discussion:** Results found that two clusters were revealed, including selfless benefactor PL leader (above the average of benevolence and moral character) and Laissez-faire PL leader (below the average of all PL dimension). The former group differed from autonomy motivation, subjective well-being, vitality, positive affect, and the reduced sense of accomplishment and devaluation of sport of burnout subscales but not on the aspect of controlling motivation, negative affect and emotional and physical exhaustion of athletes' burnout. The selfless benefactor, the PL leader group, have higher scores on those adaptive variables (such as Auto-motivation, SWB, vitality, positive affect) and lower scores on those maladaptive variables (negative affect, lower achievement, devaluation of sport). **Conclusions and suggestions** were proposed regarding how to formula specific PL leadership style. In addition, leadership styles and team environment and motivational climate connection toward athletes' basic psychological need fulfilment were discussed.

KEYWORDS

authoritarianism; moral character; benevolence; ill-being

Effect of a single bout of mindfulness and relaxation on anxiety, affect and brain activation in athletes

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ABSTRACT

Athlete population has a high risk for suffering from mental health problems (e.g., anxiety), which are common and multifaceted among the elite athlete population, which is especially true for athletes that participate in individual sports. Various forms of mental training were used for maintaining the mental health of these athletes, such as mindfulness training, or relaxation training. However, differences pertaining to the electrophysiological mechanisms resulting from both mental trainings in athletes is unknown. The purpose of the current study was to examine the differential effects between a single bout of mindfulness and relaxation on states of anxiety, positive/negative affect and the activation of the brain in a within-subjects experimental design. Twenty track and field athletes (mean age = 19.4 ± 1.31 years, 16 males, 4 females) were recruited for this study. In a counterbalanced order, all participants completed three conditions that incorporated two 30-minute experimental manipulation conditions (i.e., a single bout of mindfulness induction or relaxation induction) and a control condition (i.e., opened thinking). In addition, participants also completed measures of State-Trait Anxiety Inventory (STAI) and Positive and Negative Affect Schedule (PANAS) before and after engaging in each condition, and their activation of brain responses (i.e., alpha and theta bands) were evaluated by electroencephalography (EEG) during each condition. Compared to the control condition, both experimental conditions equally improved the state of anxiety and negative affect in the post-test, but three conditions were not found to evidence a significant difference in the pre-test. In the pre-test and post-test, also there were not found any significant difference in positive affect between the three conditions. Furthermore, the relaxation condition showed higher frontal theta power than the other conditions during the induction, and the mindfulness condition did not differ from the control condition, whereas difference in the alpha power was not observed between all conditions. This study demonstrated that both forms of a single bout of mental training produced improvements in the negative psychological outcomes, but in contrast to mindfulness induction, relaxation induction may require more cognitive resources in order to reduce the athlete's negative thoughts and affects. These results may imply that a single bout of mindfulness and relaxation inductions may induce similar outcomes through affecting the different aspects of neural processing.

KEYWORDS

mindfulness; relaxation; mental health; EEG; cognitive resources

Mental health, well-being and performance psychology in sports

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ABSTRACT

Recent times, with the global Pandemic COVID-19, have been challenging for the people, in general, and the sport community is not the exception. In particular, the actors of the sports, the athletes, in general have a tremendous amount of demands and pressure to performed in a highly demanding scenarios without necessary take care of his well-being and mental health, because it is not a necessary topic that the community and even the sport psychologists give the time and importance that deserves. This concern increase in the actual context of the pandemic, with the fears, illness, deaths, preoccupations, sadness, limitations, quarantines, postpones of the competitions, differentness ways of trainings or adapt them, and others; that are occurring on this very historical and particular context in the world, and specifically for the Peruvian athletes, because they already have different kind of limitations. More and more actors and sport psychologists on the field, are concern about the mental health and well-being of the athletes. It is a reality of this times that the athletes not only need to focus on performance, they need to take care of his well-being and mental health, even before the Pandemic, the Pandemic increase that necessity. The sports psychologists are crucial to keep, develop and maintained that. We found different proposals, frameworks and researches, that take care of that and give us evidence of the interest in the professional field, its importance, relevance and the equilibrium that the sport and athletes need, and they can have both of them, mental health and well-being, without compromise their performance, and even better, they can improve with this kind of approach. The objective of these presentation is share new frameworks (TOPPS CBT, EMDR, mindfulness, MAC, MSPE, SPM), experiences with Peruvian athletes and some research that give both possibilities, and in fact if we take care of the well-being and mental health the athlete can performance better in a middle and long term with a better career, a more balance, full field live, and prevent clinical psychopathologies like depression, anxiety, OCD, PTSD, eating disorders, for mention some pathologies that can appear in the sport.

KEYWORDS

Mental Health; Well-being; Performance Psychology

Motivational factors in competitive sport among female youth athletes

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ABSTRACT

The motivation for participation among youth female athletes has been an important topic for the last few decades. The focus of this study was understanding the reasons for starting and adhering to competitive activity among young female athletes. All these to understand how to decrease the dropout rate in individual and team sport disciplines. The current study involved 889 girls who practice regularly in a competitive setting as part of a national program for developed women's sport. The subjects, ranged in age from 8-17 years, were drawn from different geographical area within the country and participated in 10 different individual and team sport disciplines. The modified Gould and colleagues' (1985) questionnaire, aimed at examining young athletes' reasons for participating in sports, was tailored to the research objectives. Results of factor analysis for participation motives to start competitive sport revealed five different interpretable factors: IM (intrinsic motivation), EM (extrinsic motivation), TM (team motivation), WM (win motivation), and HM (health motivation). A two-way ANOVA with repeated measures (5 factors x 3 age groups) revealed significant differences between the 5 factors within the young and middle groups. Post-hoc test with Bonferroni adjustments indicated that IM and WM were significantly different then EM and TM. In addition, IM was significantly different than HM. When comparing between individual and team sport disciplines a two-way ANOVA (5 factors x 2 team/individual) revealed that the intrinsic, winning and health motivations were stronger in team sport compared to individual sport. The other major goal of this study was to understand the motives of the young female athletes to continue and adhere to the competitive sport activity. Results of the factor analysis for participation motives to continue competitive sport revealed three motivational factors similarly to the motives regarding starting activity (IM, EM, TM) and another two different factors, CM (competitive motivation) and HM (hobby motivation). Post-hoc test with Bonferroni adjustment indicated on similar profile of the three age groups with dominant effect of IM and TM while some differences can be seen when comparing team and individual sports. The results should be shared with the coaching staff and club administration to improve the motivation of young female athletes to continue in competitive sport and to decrease the dropout rate from sport.

KEYWORDS

Motivation; Competitive Sport; Youth Female Athlete

Psychological impacts of COVID-19 pandemic on athletes

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ABSTRACT

Introduction: Since the end of 2019, spread of covid-19 (coronavirus disease 2019) pandemic has taken more than 3 million lives

KEYWORDS

covid-19; performance; training; anxiety; lockdown

globally. Strict public health measures forced such as health education, travel bans, closure of schools, work from home, prohibition of large assembly, or quarantines in most societies not only drastically changed most people's lives but also burdened them with the worries of being infected. The cancellation of tournaments and games, travel bans, social distancing, and quarantines had greatly impacted the sport industry and athletes who prepare for competitions as their daily routines. Researches are conducted qualitatively and quantitatively to discuss the mental state of athletes, how to maintain the psychological well-being and performances of athletes during the pandemic, and the strategies for them to prepare for future performances after the pandemic. Purpose: The study aimed to collect and review researches focused on the mental state of athletes during covid-19 pandemic, analyze and summarize current findings, and provide suggestions for future study and practical works in expected to contribute to the sport industry. Methods: literature review were adopted in the study to analyze existing researches. Results: current researches are categorized in five themes: 1. Emotional reaction under stress; 2. Interpersonal relationship; 3. Motivation; 4. Occupational development; and 5. Management. Conclusions: athletes also suffer from stress caused by the pandemic as general public and showed negative emotions such as anxiety, depression, and worries hence may further deteriorate their performances. However the social supports from teammates and coaches may alleviate perceived stress and anxiety; motivations of athletes took great toll during isolation and quarantine which led to lower commitment to their trainings and respective disciplines; despite the lockdown, cancellation or delay of competitions, student-athletes were not deterred from pursuing their career in sports; finally, positive mental state may be rebuilt with the psychological intervention such as journal writing and counselling sessions during the pandemic.

Intersection between mental performance consulting and mental health therapy: a team consulting approach to serving usa paralympic athletes

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ABSTRACT

International Society of Sport Psychology (ISSP) identified mental health as a major resource for athletes in their athletic career and lifespan trajectory (ISSP Position Statement; Schinke, Stambulova, Si, & Moore, 2017). Further, conceptualizing mental health as a continuum rather than a dichotomy of mental health versus mental illness, opens several pathways to impact athlete well-being and performance. Indeed, the complexity, challenges, and duration involved in deliberately pursuing athletic excellence

KEYWORDS

sport psychology practice; mental performance; mental health; interdisciplinary support team

contributes to a plethora of potential mental health risks, concerns, issues, and problems (Henriksen et al., 2020; International Olympic Committee Consensus Statement; Reardon et al., 2019). Sleep concerns and disorders, anxiety and related disorders, eating disorders, or sport-related concussion are just few examples of mental health problems that profoundly affect athletes as persons and performers. The ongoing COVID-19 pandemic and the delays and uncertainties around competition schedules (including the 2020 Tokyo Olympic and Paralympic Games) only exacerbated both the risk for and the prevalence of mental health concerns in the world of sport (Reardon et al., 2020; Stambulova, Schinke, Lavallee, & Wyllemna, 2020). Consequently, sport psychology practitioners in high performing settings (e.g., collegiate [US], professional, Olympic and Paralympic) are often called to operate in an intersection between mental performance consulting and mental health therapy (Henriksen et al., 2019). In this presentation, three sport psychology professionals will provide an overview of a team consulting approach to serving the USA Paralympic athletes. After a brief discussion of the requirements for necessary education, appropriate credentials, and following best ethical practices, the presenters will provide examples of their own collaboration when facing athletes' performance and mental health needs. Subsets of this collaboration can be seen as: (a) "leaning in" (or "referring in"), when an athlete is in clinical distress and the clinically trained practitioner is invited to ongoing mental performance sessions to attend to the athlete's immediate mental health concerns; (b) "leaning out", once the athlete is stable and when the mental performance work has been resumed with additional (if needed) consultations from the clinical provider; and (c) "referring out" to mental health providers outside the three-person consulting team. This approach has been generally effective in supporting athletes in acute distress while simultaneously preserving previously established relationships between the mental performance consultant and the athlete. The presentation will conclude with insights for sport psychology practitioners who operate within an interdisciplinary sport science support team.

Development and evaluation of an online webinar for sport coaches: suggested best practices for supporting athletes

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ABSTRACT

Coach education programs have been identified as an effective way of modifying coaches' attitudes and behaviours, and have focused on a wide range of sport-related topics (e.g., Belski et al., 2018). However, few coach education programs have addressed the topic of social support – a frequent and common practice between coaches and athletes. Therefore, the purpose of this project was to develop and evaluate a social support coach

KEYWORDS

athlete wellbeing; coach-athlete relationships; coach education; knowledge translation; social support

education webinar. Webinar content was based on findings from two research studies exploring support provision to athletes (see Bissett & Tamminen, 2020; Poucher et al., 2018). The project was conducted in three stages: (1) development of webinar, (2) pilot testing, and (3) delivery and evaluation. The online webinar was presented to an audience of 133 sport coaches and evaluated using pre- and post-webinar surveys. Surveys consisted of 14 Likert scale questions developed based on the COM-B behaviour change model (Michie et al., 2011; Sweet et al., 2019), and 4 open-ended questions. Quantitative data were analyzed using descriptive statistics and paired samples t-tests; qualitative data were analyzed using thematic analysis. Results indicated that following the webinar, coaches reported significant improvements in their perceived capability, opportunity, motivation, and behaviour for providing social support to athletes. Effect sizes were very large for reported changes in coaches' opportunity and motivation to provide social support (Cohen's $d > 1.3$), large for changes in behavior (Cohen's $d > 0.8$), and medium for changes in motivation (Cohen's $d > 0.5$). Open-ended comments demonstrated that the webinar provided novel information that was perceived as helpful to a wide range of coaches (e.g., competitive and recreational level coaches). Participants suggested areas for improvement, such as providing information specific to youth and para-athletes, and enhancing participant engagement. This feedback may be used to help optimize the development of future coach education webinars. Moving forward, those who work with coaches should consider providing coach education centered on a wider variety of sport-related topics, including general social support practices, as well as information specific to support provision of youth and para-athletes. In addition, the merits of online education should not be overlooked. If an online-based format is appropriate, it may grant a greater number of coaches access to educational content, not only through reducing the geographic constraints of in-person education, but also by making such education openly available online so that interested coaches can view it at a time that is convenient for them.

Experimental assessment of the acceptability and effectiveness of zoom workshops on team cohesion during the Covid-19 pandemic

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ABSTRACT

When the COVID-19 pandemic hit the globe in 2020, professional sports around the world shut down. Athletes on many sports teams were no longer allowed to train together or to compete. Coaches came to rely upon online platforms such as Zoom to

KEYWORDS

crew; team cohesion; virtual workshop; covid-19

meet with athletes, develop and sustain team cohesion, and deliver programming for their teams. Research suggests that sport team cohesion is enhanced by physical proximity, as proximity generates opportunities for social interaction and task performance (Eys et al., 2009). The lack of physical interaction that occurred among teammates during the COVID-19 pandemic may have affected team cohesion. The purpose of this experiment is to determine the acceptability of workshops conducted on Zoom as well as the effects of a Zoom team cohesion workshop on athletes' perceptions of team cohesion. After gaining approval from the Institutional Review Board, athletes on college crew teams (N=24) were invited to participate in the research. Interested athletes gave informed consent, completed a Demographic Questionnaire and the Group Environment Questionnaire (GEQ; Carron et al., 1985) to measure team cohesion and were randomly assigned by team to attend a Zoom workshop on team cohesion or a control Zoom workshop. After the workshop, participants completed a manipulation check item to ensure they understood the workshop content, the GEQ, and the 6-item Treatment Acceptability Questionnaire (TAQ; Hunsley, 1992) to assess their perceptions of the Zoom workshop in terms of how acceptable, ethical, and effective the workshop was, as well as how likely the workshop was to have negative effects, how knowledgeable the creators of the workshop were, and the trustworthiness of the information conveyed in the workshop. Two weeks later, the athletes followed the same process however participated in the other workshop intervention. Results indicated that the Zoom workshops were perceived favorably and rated as acceptable by the athletes. However, workshop attendance and participation had no statistically significant effects on team cohesion. The findings suggest that athletes find team Zoom programming to be acceptable but that a single team workshop may not be sufficient to modify team cohesion during a pandemic. Given the promising results with regard to treatment acceptability of Zoom workshops, examination of the effects of a series of Zoom workshops on team cohesion may be warranted.

Enhancing role efficacy in youth football: applying the 5C's to job descriptions by position

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ABSTRACT

Psychological skills training has been described by expert coaches as football's next frontier. As clubs and federations adapt psychological skills training into their curriculums, strong consideration must be given to how they can be used to positively affect performance in competition. Role efficacy under

KEYWORDS

5C's; psychological skills training; role efficacy; coach efficacy

conditions of high role clarity has been shown to be a good predictor of performance. The purpose of this study was to create job descriptions for players, using Dr. Chris Harwood's 5C's for coaching psychological skills in youth football as a framework. The 5C's are commitment, communication, concentration, control and confidence. Their strength lies in being designed to be coach delivered. This is important to enhance coach efficacy so that psychological skills become part of a holistic coaching strategy, instead of being delivered separate and away from tactical, technical and physical skills. This study collected data from a workshop and individual interviews with 9 expert coaches with considerable experience at a high level in football. They were assigned the task of creating job descriptions for the following positions; goalkeeper, centre-backs, full-backs, defensive midfielder, attacking midfielder, winger and forward. The results were job descriptions assigning optimal behaviors for each position, using the 5C's framework. Examples include goalkeepers displaying good confidence by asking for the ball to their feet when their team is under pressure, centre backs displaying good communication by vocally directing players in front of them, full backs showing good concentration by getting consistently up and down the field to support both defense and attack, defensive midfielders displaying good control by taking up positions to quickly stop counter attacks when their team is attacking and forwards showing good commitment by continuing to ask for the ball even if they have been without it for a long time. The conclusion is that the job descriptions have significant applied benefits. Coaches can frame the desired outcome to the corresponding C using verbal communication in and out of competition, enhancing role clarity and in turn role efficacy.

Effect of combined mental and physical practice on learning motor skills in volleyball

Pothula Reddy

Pothula Madhusudan Reddy

ABSTRACT

The purpose of this study was to investigate the effectiveness of Combined mental and physical practice on learning motor skills in volleyball. Sixty subjects were random & assigned to two groups The Control Group (n = 30) performed only physical practice; the Experimental Group (n = 30) performed both mental and physical practice. The subjects were administered combination of mental and physical practice for duration of thirty minutes over a period of twelve weeks. The AAPHER volleyball skill test was selected as criterion variable to test the skills ability of subjects for the experiment. Combined Mental and physical practice method was found to be significantly better in improving learning motor skills i.e., volleying, serving, passing, and setup in comparison to control group. The effect of combined mental and physical practice method on the learning

KEYWORDS

Mental practice; Volleyball;
Motor Skills; Imagery;
Relaxation

rate in the motor skills of volleyball at periodic interval of first two weeks of duration of an experiment revealed that there was no significant improvement in any of the skill mentioned above due to combined mental, physical practice and control group. However significant improvement was found in all the skills performance due to combined mental and physical practice method, from fourth week onwards. The findings revealed that there was no periodic significant improvement in volleying and serving due to mental practice method between the fourth week and sixth week, sixth week and eighth week, eighth week and tenth week, and tenth week and twelfth week. However, periodic significant improvement was noticed in passing and setup skills due to combined mental and physical practice method between the above-mentioned training phases. The findings also revealed that there was no significant improvement in learning of motor skills of volleyball neither over a period of twelve weeks duration nor at a periodic interval of two weeks duration in the case of control group. The twelve weeks of combined mental and physical practice was effective method to improve performance and learning rate in motor skills of volleyball.

No more advantage for the home team: refereeing without social pressure in european elite football during the Covid-19 pandemic

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ABSTRACT

Due to the COVID-19 pandemic, European elite football (soccer) leagues played the remaining season 2019/20 without or strongly limited attendance of supporters (i.e., "ghost games"). From a psychological perspective this situation poses a unique opportunity to investigate the crowd's influence on referee decisions and the associated effect of "home advantage". A total of 1286 matches - played in the top leagues of Spain, England, Germany, Italy, Russia, Turkey, Austria and the Czech Republic - were analyzed for results, fouls, bookings and reasons for bookings and contrasted between respective matchdays of season 2018/19 (regular attendance) and season 2019/20 (ghost games). There are two main findings. First, the overall home advantage effect in the respective elite leagues - identified in the respective matches of the regular 2018/19 season - vanished in the ghost games of the 2019/20 season. Consequently, home teams lost significantly more matches ($U = 1991$, $p = .007$, $r = .222$), whereas away teams won significantly more matches ($U = 1913$, $p = .003$, $r = .249$). Second, only home teams (but not away teams) were booked significantly more often with yellow cards for committing fouls in ghost games ($U = 1712.5$, $p = .000$, $r = .309$). Most importantly, our analysis provides evidence that this effect was independent of the course of the games. In contrast,

KEYWORDS

COVID-19; football; home advantage; referee; soccer

bookings for other reasons (criticism and unfair sportsmanship) changed similarly for both home and away teams in ghost games. We conclude that the lack of supporters in top European football during the COVID-19 pandemic led to decreased social pressure from the ranks on referees. This implication is consistent with previous research in smaller size and experiments in artificial settings. As a result of decreased social pressure, referees assessed the play of home teams more objectively, which further led to increased yellow cards awarded for fouls committed by the home teams. Since there were no significant changes in referee decisions against the away teams, we argue that our observations in ghost games reflect a reduction of unconscious favoritism of referees for the home teams. This key finding provides a firm empirical basis for the development of novel methods - such as virtual reality interventions - for training referees and thus minimizing the effects of decisions made under social pressure.

Lessons learned from meaningful work: implications for sport psychology and understanding meaningfulness in sport

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ABSTRACT

Meaning and meaningfulness of movement have been addressed in physical education and philosophy of sport, and studies are starting to emerge in psychology of sport (Luzzeri & Chow, 2020). Since meaningfulness in sport is still a nascent topic of study, however, scholars looking for inspiration and guidance in this area can benefit from a critical examination of studies on meaningfulness in other life domains. In this presentation, we review the literature on meaningful work (arguably the most studied life domain in relation to meaningfulness) and its relevance for researchers in the psychology of sport. We examine (1) definitions of meaning and meaningfulness of work, (2) antecedents, outcomes and experiences of meaningful work and (3) potential pitfalls that researchers and practitioners might want to avoid in designing their studies and practices in a sport context. Meaningful work has been identified as one of the central workplace trends in the 21st century and is a flourishing interdisciplinary research area. Researchers have observed that many people are longing for work that not only provides a paycheck but contributes to a sense of meaning, often through personal growth and making a positive contribution to society. While meaningful work has been identified as providing important personal and organisational benefits (job performance, personal engagement, organisational commitment) (Bailey et al., 2019), researchers have also discerned some potential dangers of meaningful work including loss of work-life balance and the risk of being exploited by employers. Researchers and practitioners have also been warned about 'management of meaning' and commodification of meaningfulness which are important

KEYWORDS

meaning; athletic identity; calling; sport commitment; methodology

concerns also for sport psychologists given the discipline's applied emphasis and possibility for using meaning/meaningfulness for the purposes of performance enhancement.

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Uncertainty states and concerns of potential olympians and physical education students in the situation of the Covid-19 pandemic

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ABSTRACT

The circumstances of a pandemic have multiple social impacts due to their sudden, uncertain and harmful effects. Pandemic conditions are associated with the lack of emotional stability, as well as the inability to participate in the coming events. There is a predominant sense of loss throughout society. It is a concern for the one's health or one's relatives, loss of direct social contacts, change of activity, educational opportunities, recreation, activity and freedom. The aim of the study was to compare attitudes towards the current situation and concerns related to it during the COVID-19 epidemic in athletes involved in Olympic preparations and students of Physical Education. The research involved two groups. There were 57 Polish potential Olympians. Their age was between 18 and 45 ($M = 26.61$, $SD = 5.562$), including 29 women (52.7%), 28 men (49.1%) and 54 extramural students of Physical Education aged 19 to 40 ($M = 25.69$, $SD = 5.908$). There were 26 women (48.1%) and 28 men (51.9%). The research was conducted in the form of an on-line survey in the period of April 7-28, 2020 during the COVID-19 pandemic. At that time, there was a ban on playing sports in the group, all facilities were closed. 41.8 % of surveyed Olympians said that the postponement of the Olympic Games had caused their dissatisfaction. 37.3% were satisfied with this decision. It turned out that almost 80% of the competitors continued training, but half of them were afraid, due to the financial situation, they would have to stop preparing for the Olympic Games. In turn, almost 40% of students declared that they would stop working during the pandemic, but 42.3 % they showed that they engaged in more than usual physical activity. Less than half of them revealed concerns about passing the semester and losing their job. The extreme of the statement was visible among the best Polish athletes preparing for the Olympic Games and Physical Education

KEYWORDS

Well-being; Health; XXXII Summer Olympic Games; XXXII Sumer Olympic Games; Physical Activity

students. Some of the respondents showed great restlessness and concerns in connection with the pandemic threat, which could be caused by the threat to their own and their relatives' health, bad economic situation and uncertainty of the future. Many people stayed with physical exercise and even declared more frequent training during the pandemic. It could be assumed that in people strongly associated with physical activity it will be a reflection of a defensive reaction to excessive stress.

Effect of Stress Inoculation Training (SIT) on anxiety, psychological flexibility, and metacognition in golfers

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ABSTRACT

The Mind and body connection in the game of Golf holds primary significance as is evident by the large body of literature supporting this assertion. However, despite this knowledge, many golfers in India find themselves giving into performance anxiety, choking under pressure, or underperforming due to heightened threat perception during competitions. In order to tackle such submission to stress, the current research aims to study the effects of a stress inoculation training program on anxiety, psychological flexibility, and metacognition in golfers. The concept of stress inoculation works at a psychosocial level that seeks to make the recipient of the intervention immune to stress and anxiety. It functions like any other PST, comprising 3 phases; conceptualization, rehearsal, and application. Its effect on Metacognition is being studied as it has been suggested that PST in sports is essentially an exercise in meta-cognitive instructions (Moran, 1996). The sample for this study consisted of golfers ($n = 8$) with their ages ranging between 18 to 26 years with Mean & S.D of 20.5 ± 2.44 , who were randomly assigned to either experimental ($n=4$) or active control group ($n=4$). The experimental group was then subjected to an eight weeks intervention (10 sessions) on SIT while the active control group was kept engaged in reading tasks and physical workout, thus devoid of any mental training for the same period of time. A mixed-measure approach was used to evaluate the effectiveness of the SIT program comprising of self-report data from questionnaires i.e., Sports competition anxiety test (SCAT) by Martens (1977), Acceptance & action questionnaire (AAQ-2) by Bond et al., (2011), and Metacognition questionnaire (MCQ-30) by Wells & Cartwright-Hatton (2004) along with a self assessment of performance and perceived effectiveness of SIT program by the subjects. The results of the statistical analysis indicated the effectiveness of SIT in reducing the level of anxiety experienced between the experimental and active control group, along with a positive correlation of moderate strength between experience of sports competition anxiety and greater psychological inflexibility, although it was not statistically significant. Thus it can be

KEYWORDS

Stress Inoculation Training;
Psychological Flexibility;
Anxiety; Metacognition;
Golfers

concluded that SIT can contribute to anxiety management in sports, however further studies are required to explore its effects on Metacognition in athletes.

Effect of Stress Inoculation Training (SIT) on competitive state anxiety dimensions, heart rate & performance among golfers

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ABSTRACT

Anxiety is one such factor whose influence on performance continues to be one of the main research interests for sports psychologists (Hanin, 2000). This influence is studied by breaking down the components of anxiety to see how somatic anxiety affects an athlete's gross motor and fine motor activities, and similarly how cognitive anxiety has an impact on their performance and well-being. The major impetus of the research however is on finding ways to help the athletes in overcoming the barriers that are the results of the debilitating effects of anxiety on performance. In the present research, the effects of Miechebaum's stress inoculation training (SIT) was studied on the competitive state anxiety dimensions, which are cognitive anxiety, somatic anxiety, and self-confidence, along with heart rate and performance to generate a more comprehensive understanding of this intervention and how it affects psychological and physiological components related with anxiety. The effect of an 8 week (12 sessions) SIT program was catered to a sample of golfers ($n = 12$, $M = 24.6$, $SD = 4.78$) who were already prone to experiencing high levels of anxiety. A baseline assessment of the research variables was evaluated through the Competitive State Anxiety Inventory (CSAI-2) by Martens et al. (1990) and Boat storm smartwatch for competitive state anxiety dimensions and heart rate, respectively. For assessment of performance, the scorecard of the sample was used as a key performance indicator (KPI), in which their performance was analyzed prior to intervention through an in-house competition, followed by another match, organized after the 8-week intervention. The Post-intervention assessment of the research variables indicated statistically significant differences in cognitive anxiety, $t(11) = 9.17$, $p < .001$; somatic anxiety, $t(11) = 9.53$, $p < .001$; self confidence, $t(11) = -11.19$, $p < .001$; heart rate, $t(11) = 3.93$, $p = .002$, however no significant differences were obtained in their performance based on the KPI chosen for this study. Thus, the results indicated significant differences in psychological and physiological variables, showing a decrease in the experience of cognitive anxiety, somatic anxiety, and heart rate (bpm) while an increase in self- confidence, in post-intervention assessment, however significant differences in performance were not established through statistical treatment of data.

KEYWORDS

Stress Inoculation Training;
Competitive State Anxiety;
Heart Rate; Performance;
Golfers

Coaching in adversity: how paralympic athletes, coaches and support staff perceive coaching inspiration and effectiveness during Covid-19

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ABSTRACT

Research into coaching in disability sport is relatively under-developed (Falcao, 2015). Furthermore, inspirational leadership in sport has a limited empirical base (e.g., Searle & Hanrahan, 2011; Figgins et al., 2016). Recognising that various personnel can act as leaders, this study initially aimed to explore inspirational leadership in Paralympic sport. Two Paralympic sports, one GB visually impaired individual sport and one GB wheelchair team sport, agreed to take part in this longitudinal study pre-, during and post-Tokyo 2020 Paralympic Games (subsequently postponed). Data were collected via in-depth, semi-structured interviews focused around the broad question of 'What do you look for in leaders in your sport?' and exploring examples of inspirational leadership (during Covid restrictions the focus was especially on these adverse circumstances). Data collection spanned immediate pre-Covid (conducted in person at training squad premises) and during-Covid periods (undertaken via MS Teams due to the Covid-19 restrictions). A total of 18 hours of interviews from 11 athletes and 10 staff (mean interview time 54 mins), were transcribed and analysed via inductive thematic analysis using procedures suggested by Braun and Clarke (2006). These analyses yielded a range of themes: e.g., 'Coach commitment', 'Going the extra mile', 'Athlete well-being first', and 'Clear strategy'. Whilst a number of these themes have been identified as characteristics associated with inspirational leadership (e.g., Figgins et al., 2016), the during-Covid data found inspirational leadership to be less evident than expected. Putting the person before athletic performance, having care for the individual's well-being, building trust and allowing the athlete 'space', were instead seen as essential. Whilst pre-Covid data (and previous research, e.g., Searle and Hanrahan, 2011; Thrash and Elliot, 2003, in a non-sporting context) often associate inspirational leadership with performance-related behaviours, during-Covid the emphasis of effective coaching appeared to be more on 'care' and 'support' with a focus on the athlete as a 'person'. These findings have implications for governing bodies of sport, directors of coaching and all those involved in elite sport especially during times of adversity.

KEYWORDS

Leadership; Coaching effectiveness; Paralympic Sport; Covid 19

Do management teams throughout New Zealand rugby apply a learning organisation model to drive performance?

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ABSTRACT

This research identifies a learning organisation model in New Zealand rugby teams and describes the trust-based, player-centered management model on which rugby teams in New Zealand operate. This model relies on a continuous reflection and review process enhanced using leadership groups, player groups, and the incorporation of technology. The open and ongoing communication process within the teams, not only helped develop leadership, but it generated learning through various channels in the team. The overall purpose of this research was to explore whether management teams at different levels of rugby in New Zealand apply a learning organisation model to drive performance. The research has an inductive exploratory approach that proposes a framework to be used by management teams to implement a learning organisation management model for teams to drive performance. This was pursued via a qualitative, mono-method strategy to data gathering. The research takes on a cross-sectional study to look at management teams in New Zealand rugby across different age groups and performance levels. Coaches and managers at the 1st XV, Club Premiere and National Provincial Championship level were interviewed. Using a thematic analysis five themes were identified: communication, leadership groups, coaching and management model, reflection and review process and principles driving New Zealand rugby. These principles were communication, trust, enjoyment, player-centered approach and continuous learning. The findings identified a learning organisation structure in the coaching and management model used by New Zealand rugby teams. They also found the widespread use of messaging groups and technology across the teams, and their reflection and review processes, drove the continuous learning. A key to the learning organisation structure were the leadership groups. This research provides an explicit description of the management model used by rugby teams in New Zealand, which can inform future coaching and management. Future research can be undertaken to explore the quality of the learning and communication within New Zealand rugby teams and the effectiveness of leadership groups in management structures.

KEYWORDS

Management; Teams; Learning; Organisation; Performance

Lifestyle challenges and mental health of professional tennis players: an exploratory case study

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ABSTRACT

The professional tennis tour lifestyle has become increasingly difficult over time (International Tennis Federation, 2017). While the financial strain of life on the professional tour has previously been identified (International Tennis Federation, 2017), there is a

KEYWORDS

Professional Tennis; Elite Sport; Mental Health; Wellbeing; Athletic Transition

gap in our understanding of the additional lifestyle challenges that players face and the potential impact these have on players' progression and their mental health and wellbeing. This study was an exploratory case study with "Behind the Racquet" (Yin, 2017), a social media platform aimed at raising awareness of challenges players face on the professional tour as its case, and theoretically underpinned by Maslow's (1943) hierarchy of needs, with the aim of gaining a contextual understanding of these challenges. Using "Behind the Racquet" as the data source provided a unique opportunity to gain authentic, vulnerable, self-reported experiences from a hard-to-reach population in professional tennis players. The sample consisted of 65 professional players (33 male, 32 female; age range = 18 to 46 years; mean age = 27.34 years) from 28 different countries, of which 56 were active players and 9 were retired. Players achieved varying levels of success within the professional game, including being Grand Slam and Olympic champions, ATP and WTA Top 10 players, as well as those within and outside of the world's Top 100. Findings illustrated physical and mental fatigue, financial imbalance of the professional system, nomadic existence, the weight of expectation, structural-caused instability and mental ill-health as the key challenges that players experience on the professional tour. These challenges, which inhibit players' ability to meet their basic needs at each of the physiological, safety, love and belonging, esteem and self-actualization levels of Maslow's (1943) hierarchy of needs, pose concerns to both players' progression on tour and their mental health and wellbeing. The study's findings have implications for players aiming to transition into professional tennis by providing valuable, contextual information around tour challenges which can assist in their preparations for their professional careers. Additionally, the mental health concerns found in this study highlight an important area for future research to help better protect professional tennis players' wellbeing in the professional game.

Psychological profile of university level boxers

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ABSTRACT

Identifying and acquiring the psychological strengths to achieve optimal performance in sports have captivated the attention of researchers since long. In order to understand the various factors that influence this acquisition and manifestation in the form of high levels of performance, persistent inquiries of whether there is a set of ideal psychological factors that are required to achieve highest performance. With the primary focus to evolve a psychological profile of boxers this study of Psychological Well-Being, Passion, Aggression, Stress, Goal Orientation, Sports Motivation and Ways of Coping among medal winner boxers,

KEYWORDS

Psychological Well Being;
Passion; Goal Orientation;
Boxers; Males

non-medal winner boxers and non-sports persons was undertaken. The secondary aim was to understand the correlates of psychological Well-Being, Passion and Goal Orientation across the entire sample. The study tried to discover the contributors to success in boxing. For this a total of 300 males within the age range of 19-24 ($M=20.95$; $SD=1.79$), out of which 100 were medal winner boxers, 100 were non-medal winner boxers and 100 were non-sportspersons, were assessed on different psychological characteristics using standardized questionnaires. The results revealed that, Medal Winner Boxers possesses different psychological constructs as compared to Non-medal Winner Boxers and Non-sportspersons. The Post-hoc analysis revealed that, Medal Winner Boxers scored higher on Environmental Mastery, Personal Growth, Positive Relations with Others, Purpose in Life, Self-Acceptance, Psychological Well-Being, Harmonious Passion, Task Orientation, Intrinsic motivation-to accomplish, Confrontive Coping, Self-Controlling, Planful Problem-Solving and Positive Reappraisal as compared to Non-medal Winner Boxers and Non-sportspersons. The mean scores of Medal Winner Boxers were lower on Obsessive Passion, Physical Aggression, Hostility, Total Aggression, Ego Orientation, Extrinsic motivation –introjected, Amotivation, Seeking Social Support, Accepting Responsibility and Escape-Avoidance as compared to their counterparts. Furthermore, Stepwise Multiple Regression analysis revealed that Medal Winner Boxers possessed unique profile as compared to Non-medal Winner Boxers and Non-sportspersons. Regression analysis for Medal Winner Boxers revealed that, Positive Reappraisal, Distancing, Intrinsic Motivation: to know and Harmonious Passion uniquely predicted Psychological Well-Being. Physical Aggression, Autonomy, Environmental Mastery and Self-Controlling uniquely predicted Obsessive Passion. Positive Relation with others and Environmental Mastery uniquely predicted Harmonious Passion and finally, Environmental Mastery uniquely predicted Ego Orientation. This study is vital in many aspects. It is an attempt to understand the correlates of Psychological Well-Being, Passion and Goal Orientation in boxing.

Keeping in mind the paucity of research in this area, the present study attempted to be fruitful by gaining insight into the psychological nature of boxers.

Effect of 12 weeks Psychological Skills Training (PST) on skill performance of soccer players

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ABSTRACT

Purpose: The present study aimed to evaluate the effect of 12 weeks Psychological Skills Training (PST) Program on Selected Skill performance Variables of soccer players. Methods: For the purpose of the study sixty soccer players belong to Th.

KEYWORDS

Psychological Skill; kicking; Dribbling; fainting

Birchandra Singh Football Academy (TBSFA), Imphal West, Manipur were selected purposively. Subjects were divided into experimental and controlled groups (30 players in each group). The data was collected through the appropriate test for all the selected skills namely kicking for a distance with right and left foot, dribbling, and fainting.

Statistical analysis: To find out the significant effect of the Psychological Skills Training Program on Skill Performance Variable of soccer players descriptive statistics' and ANCOVA were used and the level of significance was set at 0.05. The present study was mainly concerned with soccer players who participated in the all-India intervarsity competition. At present, game soccer is becoming a professional sport. So, the competition among the soccer players is growing up day by day with different colors. Most psychologists believe that levels of psychological skills are required to achieve and enhanced the performance at the time of main competition at every level. The study was carried out at Th. Birchandra Singh Football Academy (TBSFA), Imphal West, Manipur. The data were collected and statistically analyzed by employing the analysis of covariance. Findings revealed that there was no significant effect of soccer players in skill performance variables those who underwent the PST program. Hence, training was found no significant effect on skill performance variables of soccer players.

1. Conclusion: The results showed that there was a significant improvement found owing to a psychological skill training program on kicking with a right foot among the experimental and control group.

2. The results showed that there was no significant improvement found owing to a psychological skill training program on kicking with a left foot, dribbling, and angular feinting among the experimental and control groups.

Transitioning out of the professional player pathway: a grounded theory on the process in south african men's tennis

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ABSTRACT

Youth sport literature is inundated with research and reflections on the experiences of young developing athletes. Iconic visual displays are prominent on the pages of youth sport texts, depicting the athlete and the various athletic development models - both seem to reside somewhat neatly within their systems, linear continuum and or trajectory. Such visual representations are insightful for building upon our theoretical knowledge, creating meaning and proposing future research endeavors. However, in our attempt to understand and describe the athlete and their environment(s), we have historically confined our description of retrospective events, such as decision making, career transitions etc. to the sport context. This approach has been limiting to our scope of

KEYWORDS

Youth Sport; Athlete Development; Qualitative Research; Junior Tennis; South Africa

interpretation (qualitative designs) and or projection (quantitative designs) of their past, present and future (athlete) selves along with their transitioning and non-transitioning sporting careers. In other words, the 'person' and 'athlete' are portrayed as mutually exclusive. Considering this, the motivation for this project was to understand, reimagine and amplify the human experience of South African men's tennis players - the people within their development pathways. This pursuit was guided by a resounding grounded theorist's question: What is happening here? The present study explored the transition processes - professional and non-professional transitions - of elite South African men's tennis players within their developmental pathways. A Grounded Theory approach was implored, both as a qualitative strategy and as a way of collecting and analyzing data. At the proposal stage, the central phenomenon identified was the process of dropout - the decision to quit the elite professional pathway and not transition into professional tennis. Once in the field, the emergent and iterative qualitative research design, i.e., constructivist grounded theory, provided opportunities to follow leads and gain deeper understanding of the tennis player's worlds and developmental experiences. A rigorous constructivist grounded theory methodology was employed both as the research process and as strategy to generate theory. In doing so, a theoretical interpretation and explanation of tennis player transitions within South African men's tennis was generated. The findings highlight the complexity of junior tennis development in the context of the human experience. i.e., growing up in southern Africa - to quote a participant - "a place far away from the rest of the tennis world".

Not getting picked: athletes' experiences of deselection in high performance sport

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ABSTRACT

Coaches and athletes experience numerous challenging situations in their sporting journeys, such as deselection from a team or performance programme. In this study, we introduce the Grey Zone model (Slade et al., 2021). This model places a challenging situation, such as deselection, in an area defined as "the space of indeterminacy upon which all determination ultimately depends" (Blum, 2010, p. 9). Accordingly, an athlete may move to either the White Zone (safe, support zone, de-escalation) or the Black Zone (dangerous, risky zone, escalation) based on how deselection was delivered and how it was perceived. Undergoing deselection is one of the most contested and anxiety-provoking situations with some athletes experiencing clinical levels of psychological distress (Blakelock et al., 2016). It is also one that all athletes will naturally undergo and despite the inherently negative aspect of deselection, researchers have found athletes sometimes experience positive growth over time following the event (Neely

KEYWORDS

deselection; high performance sport; wellbeing

et al., 20018). This process can leave a lasting effect on athletes, yet there is little research on the process of (de)selection, the actual moment of deselection, including who delivered the decision and how, where, and when it was delivered, and the impact it has on an athlete's wellbeing and future performances. The aim of this research is to understand athletes' experiences and perceptions in order to help develop a process that encourages positive growth following deselection and minimizes the immediate negative effects. Data collection is ongoing but approximately 15 to 20 current and retired high performance and World Class Performance athletes will be interviewed about their experience (s) of deselection. The semi-structured interviews take approximately 60 minutes. Transcripts will be analysed using an inductive and deductive approach guided by the Grey Zone model. Using the Grey Zone model, higher order and lower order themes will be identified as moving an athlete into the White Zone or Black Zone around the point of deselection. The practical applications of this research include capturing the lived experience and perception of athletes that have been faced with deselection to better understand the impact of deselection on athletes as performers and human beings. Findings from this study would inform national sport organisations' selection policy, better practices, raise awareness about the challenges faced for all involved in the deselection process, and ensure coaches, coach developers, performance directors, lifestyle advisers, and others involved in high performance sport can better support athletes (and coaches) through the process.

Occupational related stress: assessing the prevalence and sources of stressors among elite coaches and players in the ghana premier league

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ABSTRACT

Introduction: Work-related stress has been classified globally as a health epidemic which is common among many individuals across different geographical boundaries. Despite this established knowledge, research has primarily focused on the general population and among health workers. Therefore, understanding stress related experiences in the context of professional sports would help design appropriate stress management interventions for effective coping. **Purpose:** The overarching aim of this research was to examine occupational stress related experiences among coaches and players in the Ghana premier league. The study sought to assess: (1) the prevalence of stressors among coaches and players, (2) which areas of their job schedules elicit reported stress, and (3) how age and working experience influence their stress level. **Methods:** Using a census survey, officially registered 44 premier league coaches and 424 players

KEYWORDS

Football Coaches; Ghana; Players; Premier League; Stress

from 18 premier league clubs completed the intensity dimension of the Organizational Stressor Indicator for Sport Performers (OSI-SP) which had 5 subscales namely; Goals and Development, Logistics and Operation, Team and Culture, Coaching and Selection. Results: Descriptive statistics and multivariate analysis of variance were used to analyze the data. The results revealed that stress was prevalent among football coaches and players, with it being significantly more dominant among coaches, $p < .001$. Selection was identified as the most predominant stressor for coaches (i.e., selecting players to play) and players (i.e., being selected). Age and experience were found not to be significant predictors of stressors for coaches and players in Ghana. Conclusion: Findings reveal that generally, stress is common among football coaches and players, especially on issues related to selection. Sports psychologists and team managers in the various premier league clubs should incorporate designed interventions (e.g., stress inoculation training) aimed at providing adequate psychological support for the identified groups to promote their well-being.

The health and well-being of Australian professional sport team support staff in lockdown 'Hubs' during Covid-19

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ABSTRACT

COVID-19 continues to have a dramatic impact on Australian sport, affecting professional and amateur levels alike. No health emergency in our lifetime has had a greater impact on sport, with control measures being implemented to ensure athlete safety, including the postponements of sporting events and competitions from local through to the Olympics. Where these have been able to proceed, particularly professional sport, it has been insisted that teams comply with conditions that ensure a negligible risk of the spreading of COVID-19, including competition proceeding within empty stadiums. Conditions under which sport teams have been subjected have required strict adherence with penalties for breaches ranging from lengthy bans to heavy fines or both. One of the strategies sport codes have implemented to ensure sport competitions can proceed has been a strict quarantining of teams to accommodation in relatively safe locations known as 'hubs'. The quarantining of teams to 'hubs' has often meant teams have had to travel long distances from their homes, where players, coaches and support staff, have become isolated from friends, family, and normal day-to-day life for extended periods of time. With sport teams going into 'hubs', much of the focus on the effects of 'hub life' has focused somewhat exclusively on players and coaches. However, no professional sport team can operate without the support staff that get the players onto the field of play and keep them there; for example, doctors, physiotherapists, psychologists and administrators. Therefore, the focus of this research was to

KEYWORDS

CoVid-19; Sport; Support Staff; Wellbeing; Hub's

explore the impact of hub life on the health and wellbeing of sport team support staff. Participants were asked to complete an adapted WHOQOL-Bref Quality of Life questionnaire. Thirty-five participants, ranging in age from 25 to 63 years, with 24 being male, consented to participate. Three sport codes, twelve teams, overall representing eight support staff roles contributed responses. Overall, 46% of participants reported that their overall sense of wellbeing was worse to much worse under 'hub' conditions compared to just before entering a 'hub'. In conclusion, it is hoped that the results of this research provide a better understanding of the effects of 'hub life' on the wellbeing of sport team support staff and that focused initiatives are implemented for all personnel, where teams are called upon to enter 'hub' conditions due to an ongoing pandemic.

Exploring the relationship between youth sport participation and parental social support

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ABSTRACT

Parents are active participants in their child's youth sport endeavours, and as a result invest themselves temporally, financially, and emotionally in their child's sport-related success and enjoyment (Wiersma & Fifer, 2008). Accordingly, the ongoing investment required from parents often leads to personal sacrifice with regard to social interaction outside of sport (Bean et al., 2018). As such, considering that many parents from the same sport club may experience similar lost opportunities for social interaction and support, it is imperative to leverage youth sport as a context to promote social support among parents. The purpose of this exploratory study is to test whether having children involved in organised sport leads to increased perceptions of social support among primary (i.e., parent that knows the child best) and secondary parents. Using data from the Longitudinal Study of Australian Children, a total of 3102 primary (Mage = 43.04, SD = 8.75) and 2523 secondary parents (Mage = 46.13, SD = 6.16) were categorised as either a) parents with child-athletes involved in team-sport only; b) parents with child-athletes involved in individual-sport only; c) parents with child-athletes involved in both types of sport; and d) parents with children involved in no form of organised sport. Based on these categories, we tested differences between perceptions of emotional/informational support, affectionate support, tangible support, positive social interactions, and total social support. Additionally, we examined whether parent's household income and child sex moderated the aforementioned relationships. Finally, we tested whether the number of days parents typically spent involved in sport per week, and the number of hours parents spent in sport during a typical participation day predicted perceptions of social support. We found evidence that primary

KEYWORDS

sport parents; social support; income; youth sport

parents with children involved in team-sport only, and primary parents with children involved in both type of sport, reported stronger perceptions of social support (across all dimensions) than primary parents of individual-sport athletes and primary parents of non-sport participants. In addition, parents with higher household income were more likely to perceive high social support when their children were involved in team sports. Further, the number of weekly days parents spent involved in youth sport activities positively predicted perceptions of social support among primary parents. In contrast, we did not find significant effects among secondary parents across all variables. The findings from this exploratory study offer a compelling narrative with respect to organised youth sport as an avenue for promoting social support among parents.

Beyond the assessment of sum-scores; prevalence of specific depressive symptoms in icelandic athletes

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ABSTRACT

A common feature of depression screening tools is that individual symptoms are summed to generate a total symptom score, and specified cut-off points are then imposed to evaluate the clinical relevance or severity of symptoms. However, when screening tools are utilized to assess depression, no symptom criteria (e.g., type or number of symptoms) are required to determine the clinical relevance of symptoms. Considering that depressive symptoms are highly heterogeneous, with different symptoms shown to relate to different risk factors and varying in their impact on individuals' functioning – assessing merely summed symptom scores may mask valuable information. While research on the prevalence of clinically relevant depressive symptoms in athletes has been growing rapidly in the past decade, few studies have explored the prevalence of specific depressive symptoms in athletes. This cross-sectional study aimed to fill this gap by exploring the type and number of symptoms reported by athletes (N = 894) with and without clinically relevant sum-scores. The sample consisted of Icelandic football (n = 441, age range 18-41 years, male 70.1%), basketball, (n = 238, age range 18-41 years, male 62.6%), and handball players (n = 215, age range 18-42 years, male 51.2%). Depressive symptoms were assessed by the Patient Health Questionnaire (PHQ-9), with sum-scores 10 or higher indicating clinically relevant depressive symptomatology. Result showed that the prevalence of clinically relevant depressive symptoms in the sample was 8.1%, while the prevalence of specific symptoms ranged from 1.6% for suicidal ideation to 12.2% for fatigue. The prevalence of the defining symptoms of depression, lack of interest and depressed mood, was 6.8% and 5.9%, and the prevalence of experiencing worthlessness/guilt and issues with sleep was 8.5% and 7.9%,

KEYWORDS

Assessment; Prevalence; Screening; Athletes

respectively. Among athletes with clinically relevant sum-scores, 37.5% did not exhibit the defining symptoms of depression, and 51.4 % reported 3-4, and 38.9% five or more depressive symptoms. Among athletes with moderate depressive symptoms (PHQ-9 sum-scores = 10-14), 45% of males and 53.6% of females did not exhibit the defining symptoms of depression. These findings implicated that exploring specific symptoms of depression can provide a richer understanding of athletes' depressive symptom profiles. For the sport practitioner, having a dialogue with the athlete about relevant symptoms, independent of sum-scores, could help to further conceptualize the athlete's issues. In team-based settings exploring specific symptom patterns could provide clues to potential contextual stressors that may contribute to athletes' symptom presentation (e.g., issues with sleep or guilt).

Physical activity attitude and body mass index among malaysian youth

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ABSTRACT

Introduction: Attitude has remains as a fundamental determinant in determining one's engagement in physical activity (PA) that can provide multiple broad-spectrum of health and mental well-being benefits. **Purpose:** This study aimed to examine the attitudes and Body Mass Index towards physical activity among 450 youths (132 males and 318 females) aged between 17 to 22 years old ($1.72 \pm .78$). **Methods:** The Attitude towards Physical Activity Scale (APAS: Mok et al., 2015) was used to measure attitudes of the youth. Descriptive analysis, two-way ANOVA and Pearson's product-moment correlation were utilized in the study. **Results:** Based on gender, there were slightly more males as compared to females in the obese and overweight category. There were also more males than females in the normal weight category. However, there were slightly more females than males in the underweight category. In terms of age groups, the 19-20 years old were more obese and overweight than other age groups. There were slightly more 17-18 years old as compared to other age groups in the underweight category, whereas, there were more 21-22 years old than other age groups in the normal weight category. Based on ethnicity, there were more non-Malay as compared to Malay in the obese and overweight category, but there were more Malay than non-Malay in the underweight category. There were more non-Malay as compared to the Malay in the normal weight category. Two-way ANOVA was used to examine the effect of gender and age groups, and ethnicity in BMI and attitudes. There was significant main effect on age groups, $F = 3.09$. There was no significant main effect and interaction between gender \times ethnicity in BMI. The main effect of gender was significant on learning, $F = 4.16$, fun, $F = 11.64$, fitness,

KEYWORDS

Youth; Attitude; BMI; Physical Activity

F = 27.59, and personal best, F = 8.62. Besides, the main effect of age group was significant on benefits, F = 5.49, importance, F = 6.40, learning, F = 7.74, self-efficacy, F = 11.65, fun, F = 5.22, fitness, F = 8.34, and personal best, F = 5.14. The main effect of gender was statistically significant on importance, F = 3.79, fun, F = 11.69, fitness, F = 25.64, and personal best, F = 9.78. The findings showed significant positive relationship between APAS's variables ranging from moderate (.41) to strong (.76). Conclusion: Intervention that incorporate youth and identified motivational factors can initiated behavioral changes that can improve their PA.

An evaluation of student-athlete needs to foster their positive development in sport-études programs: a mixed-method research

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ABSTRACT

In Canada, school sport programs are increasingly present in high schools, offering an ideal setting for student-athletes to develop themselves on a personal, educational and sport level. Despite the known benefits of sport participation on the development of student-athletes, participating in sports does not automatically lead to positive effects. For example, performance anxiety, injuries, or eating disorders can occur. The aim of this study was to investigate student-athletes and key school stakeholders' experiences in order to assess student-athletes' needs in terms of life skills to develop throughout Sport-études programs. A mixed-method research has been conducted with participants recruited from five high school Sport-études programs in Québec, Canada. A questionnaire measuring youth experiences through sport and life skills acquisition in sport was completed by the student-athletes (N = 378). Then, focus group interviews were conducted with a sample of these student-athletes (n = 14) and key stakeholders from each school (n = 14) to gain a better understanding of student-athletes' needs. Descriptive analyses and thematic analyses were performed for the quantitative and qualitative data, respectively. Results highlight that student-athletes do not possess optimal life skills with respect to four domains: (a) nutrition, (b) mental skills, (c) recovery skills, and (d) safe behaviours. First, concerning nutrition, quantitative results suggest that student-athletes are concerned about their weight, where many of them use weight control methods and behaviours that can be harmful. Qualitative results revealed needs in terms of healthy eating habits, body image, eating disorders and time management. Second, concerning mental skills, quantitative results indicated the presence of some needs in terms of personal, social, cognitive, and initiative skills. Qualitative results indicated needs regarding performance anxiety, emotions and

KEYWORDS

Positive Youth Development;
Life Skills; High School Sport

time management, confidence, goal settings and significant relationship between student-athletes and school stakeholders. Third, concerning recovery skills, quantitative results suggest needs related to fatigue, injuries, social and general stress. Qualitative results reveal needs in terms of sleep and general recovery. Fourth, concerning safe behaviours, quantitative results suggest that student-athletes need to adopt these kinds of behaviours in general. Qualitative results highlight needs in terms of concussions, injury management and positive climate. In conclusion, it is recommended to implement a multidisciplinary support program aimed at key school stakeholders and student-athletes' parents to instruct them on how to teach life skills to student-athletes in Sport-études programs and, ultimately, to foster their positive development.

A systematic review of the perception of mental health in youth sport and the role therapy plays within this

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ABSTRACT

Mental health within children and young people is of growing concern, with a number of strategies explored to improve their wellbeing. Despite growing media interest into the effects of organized sport on children and young people's mental health, there remains a dearth of research (Doherty, Hannigan, & Campbell, 2016). A systematic review was conducted into the qualitative research studies related to mental health and the role of therapy within youth sport development. Moreover, it provides a comprehensive appraisal of the literature on therapy and mental health within youth sport. Searches were conducted within five electronic databases: PsychINFO; CINAHL Plus; Physical Education Index; Scopus; and SportDiscus. Additional reference searches and network contacts were employed to locate further relevant papers. Ten studies were included in the final synthesis. Thematic synthesis of qualitative research was utilized to analyse the papers (Thomas & Harden, 2008). The results of the thematic analysis revealed three main themes and seven subordinate themes. The three main themes that indicated support for mental health within youth sport were: collaborative multi-disciplinary support; developing knowledge and education of mental health; and determining the psychological skills required and the approach needed to support youth athletes. This review highlights a collective agreement amongst the four key domains of: youth-athletes, coaches, family, and sport organizations, that mental health is an important issue within youth sport. However, there was also recognition of the limited knowledge and understanding provided within the industry. An overriding principle connecting the themes highlights communication in imparting knowledge, providing transparency, and ensuring the delivery of psychological skills. Drawing on the concepts

KEYWORDS

mental health; therapy; youth-athletes; youth sport; counselling

addressed in this systematic review, it suggests there is value in collaborative and creative communication. This systematic review presents an opportunity for research to be developed into the suggested therapeutic approach of producing co-constructed programmes across all support networks, allowing a connection to be developed with guidelines providing clarity and in turn reassurance for all. This approach will also communicate a clear, consistent and well-informed understanding of mental health and therapy that will not only directly benefit the youth-athlete but also the support networks around the athlete. Implications for therapy and directions for future research are discussed. These include the provision of flexible holistic support, tailored athlete-centred therapeutic practice, delivering psycho-educational programmes, and therapy acting as a platform to connect the four domains.

Mental fitness: the last bastion in elite youth sport

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ABSTRACT

Sport can bring out the best in human performance, with athletes often idolised for their technical skill and finesse. Athletes often represent the embodiment of 'living the dream', however often there is little understanding about their mental health. With growing media awareness of mental health, soccer is increasingly using psychologists within their professional team environments. This presentation explores how sport professionals in soccer academies perceive therapy might contribute to the constructive growth and development of their academy students. There is currently a dearth of research articles exploring the role and purpose of psychological therapy in youth sports environments (Doherty, Hannigan, & Campbell, 2016). However, the existing literature suggests that mental health and wellbeing issues in elite sport are influenced by sporting organizations, family and coaches. Longstaff and Gervis (2016) suggest that the use of counselling skills is a critical component to developing practitioner-athlete rapport and providing support within the relationship. Sport professionals were interviewed in order to address their opinions and attitudes in a soccer academy setting (Kvale & Brinkmann, 2009; Willig, 2013). Purposive sampling within the soccer industry was adopted in order to create an in-depth understanding of therapy within one sport (Etikan, Musa, & Alkassim, 2016). Twelve participants across a cross-section of professions within the soccer industry were selected. Reflexive Thematic Analysis was used to investigate the findings as a person-centred theoretical assumption guided my research (Braun & Clarke, 2019; Clarke, Braun, & Hayfield, 2015). The presentation will cover the perceived advantages and challenges of adopting therapy within sport academies. Preliminary findings suggest strong support but limited understanding of the

KEYWORDS

mental health; therapy;
youth-athletes; youth sport;
counselling

psychologists' role within soccer academies and provides significant progress into the research field. Integrating psychology within other sport professions, rather than a stand-alone discipline, is discussed as an opportunity to harness the collective support and develop understanding across the whole academy system. Therapy acting as a platform supporting all sport professions within an academy system involves the provision of flexible holistic support, delivery of psycho-educational programmes, and tailored therapeutic practice. Implications for practice are explored, with further development opportunities considered on how sport academies might upskill information around psychological support, especially in relation to therapy.

Review of the psychometric properties of the Positive and Negative Affect Scale (PANAS) during the COVID-19 pandemic in Chilean university athletes

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ABSTRACT

The pandemic caused by COVID-19 has had a significant impact on the university system. In this scenario, the present study aimed to describe the positive (PA) and negative (NA) affect of a sample of Chilean university athletes, reviewing the psychometric properties of the PANAS scale in the pandemic period of sports activities related to the university field. The PANAS by Watson et al. (1988) validated to Chilean university students by Dufey and Fernández (2012) was applied. The sample consisted of university athletes ($n = 254$), whose gender distribution was 45.7% male and 54.3% female with an age range of 18 to 31 years ($M = 22.17$; $SD = 2.76$). The two-factor confirmatory analysis of the original scale, using the Jamovi statistic software, obtained a poor goodness-of-fit index, as $CFI = .795$; $TLI = 0.769$; $RMSEA = .0973$. At the item level, the ALERT item of the PA factor showed a low loading of .286 and a higher weight on the AN factor. The overall reliability of the instrument was .758, for PA .864, and .859 for AN. An exploratory principal components analysis obtained a four-factor model, with new items corresponding to PA and four items to a factor called AFRAID, four items to another factor called UPSET, and another two-item factor called GUILTY. The fit of the model using the ratio between chi-square and degrees of freedom was acceptable ($X^2/df = 2.36$), according to Byrne (2009). On the other hand, $CFI = .894$, $TLI = .876$, $SRMR = .0627$, and $RMSEA = .0732$. While the overall reliability of the latter structure corresponded to .735, $AP = .879$, $AFRAID = .747$, $UPSET = .779$, and .659 for GUILTY. Using the original PANAS structure, significant differences by gender were obtained exclusively for the PA factor ($p = .002$). The new model differences by gender were obtained for PA ($p = .004$),

KEYWORDS

Affect; Covid 19 Pandemic; University Athletes

as well as for AFRAID ($p = .033$). To conclude: (a) the new four-factor model achieves higher goodness of fit than the original model. (b) higher reliability for AP to the detriment of the reliability of AN. Although the goodnesses of fit index obtained were not optimal, the new factor organization allows a more differentiated analysis of PANAS according to gender in the sample studied

Brazilian paralympic sports environment and the fostering of social relationships: what is the vision of athletics coaches?

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ABSTRACT

Coaches are essential figures in the sporting context and their psychological well-being may be the key factor for the conduction of psychologically healthy and relational training environments. In the international Paralympic context, Brazilian athletes have been gaining visibility and their achievements depend on how well these sport environments are prepared physically and psychologically to achieve their goals. Thus, this study aimed to understand Brazilian Paralympic track and field coaches' perceptions about their training environments, based on the quality of the coach-athlete relationship framework. Sixteen coaches (4 women and 11 men), with a mean age of 42.72 (± 10.9 years), linked to the Brazilian Paralympic Committee (CPB) participated on this study. We used a semi-structured interview for data collection, elaborated after an analytical matrix based on the 3+1C's Integrated Model. This model is composed by the dimensions Proximity, Commitment, Complementarity and Co-Orientation, and was designed to explain the social interactions of coaches and athletes. Interviews were analyzed using content analysis, through the steps Pre-analysis, Material Exploration, Data Treatment and Interpretations. The interviewees' answers were separated according to the 3+1C model dimensions, and thus presented in four distinct corpuses. The results revealed that Brazilian coaches value Proximity (feelings) in the relationship with their athletes, creating environments that foster trust, respect, friendship and admiration. Complementarity (behavioral) as described with indicators that correspond to the support they receive and provide to their athletes, flexibility of the leadership styles adopted, the correspondence of positive behaviors and friendly postures, in addition to the responsibilities assumed by the athletes for their activities. Co-orientation (Interests) was perceived through openness to communication, common goal setting, beliefs, and maintaining focus on goals. Finally, in the Commitment dimension (cognitive) the coaches' perception was that there is dedication of the athletes to the activities proposed in the training, the search for common goals between both, the commitment and perseverance shown in the sport context. It is

KEYWORDS

Social Relations; Paraspports; Coaches; Athletics

concluded that the Brazilian Paralympic athletics coaches consider the high quality of the relationships with their athletes, especially regarding the affective, behavioral and co-orientation components, which demonstrates the relational environment that they raise, based on human formation, positive conducts, relationship capacity, social recognition and performance.

The impact of passion, hope and sociodemographic factors on the performance of brazilian college athletes

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ABSTRACT

In Brazil, college sports initially started from the athletes' initiative through the creation of academic athletic associations and organization of local competitions, with the intent of including sports in their academic lives along with its social and health-related aspects. Today, college sports lead some of its athletes to highly competitive national and international events. Under the light of psychology, it is possible to notice the importance of motivational factors for college athletes, who have to conciliate the sport and academic demands, with impacts on performance and well-being. Our goal with this study was to analyze the association of psychological and sociodemographic factors with sports performance in a sample of Brazilian college athletes. Our sample comprised 430 college athletes (21.77 ± 3.19 years old; $N = 227$ males, 203 females) from individual ($N = 152$) and team sports ($N = 278$) who competed at the 2018 Brazilian College Games – Final Phase (JUBs). We uses an information sheet, the Passion Scale and the Dispositional Hope Scale. Sport performance was measures as... We uses the Spearman correlation coefficient and Binary logistic regression as data analysis approaches ($p < 0.05$). A multivariable model was fit to evaluate the association of ... and sports performance Our sample of Brazilian college athletes presented high levels of harmonious passion ($MD = 5.83$), and hope disposition related to agency thinking ($MD = 16.00$), pathways thinking ($MD = 16.00$) and global hope ($MD = 33.00$). Positive correlations were observed between harmonious passion, agency thinking, pathways thinking and global hope ($r = 0.33$ to 0.42). Multivariable models revealed that athletes from private institutions were more likely to obtain a medal (Top 3) in individual ($OR = 3.02$) and team sports ($OR = 14.20$) compared to those from public universities. Athletes' competitive level was also a predictor of performance for both individual ($OR = 4.76$; $95\%CI, 1.74-13.68$) and team sports ($OR = 2.74$; $95\%CI, 1.23-6.64$). Athletes representing the southern region of Brazil showed higher chances of being in the Top 3 ($OR = 7.02$; $95\%CI, 1.12-64.57$). Performance (awarding a medal) was also predicted by having high levels of obsessive passion ($OR = 11.53$;

KEYWORDS

College sports; College athletes; Passion; Hope; Sociodemographic aspects

95%CI, 1.20-139.58). Harmonious passion for the sport was predominant in these athletes, who also displayed high levels of hope. Sociodemographic factors have significantly influenced the performance of athletes from both individual and team sports, hence, obtaining a medal was associated with competing at the international level and representing a private institution. In addition, having high levels of obsessive passion and being from the south region of Brazil also predicted

The lure of psychedelic psychiatry: what does it mean for sport psychologists?

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The University of Melbourne

ABSTRACT

Elite athletes are known to experience significant mental health concerns. While a proportion of athletes might be expected to experience mental ill-health regardless of their involvement in sport, elite competition can also be a risk factor; predisposing athletes to a range of different stressors. Further, retirement situates itself as a unique and complex process for athletes, with the well-known expression that athletes “die twice” commonly invoked. While work aiming to understand the prevalence and potential risk factors for athlete mental health has developed significantly in recent years, treatments remain lacking. One approach which is gaining significant momentum in the field of psychiatry, is psychedelic-assisted psychotherapy. Despite a politically vilified past, classical psychedelics like lysergic acid diethylamide (LSD) and psilocybin are experiencing a clinical research revival. In most studies, the psychedelic substance is given under supervision alongside a brief course of psychotherapy that allows participants to work with their therapists to prepare for, safely undergo, and subsequently integrate the psychedelic experience. During the participants’ experience, therapists most commonly take a patient-led and supportive approach. A recently published phase 2, double-blind, randomized, controlled trial involving patients with major depressive disorder demonstrated relative equivalency with a leading SSRI medication in the primary outcome, with a range of secondary outcomes favoring psilocybin. Other studies have shown a reduction in anxiety relating to life-threatening medical conditions, and small pilot trials have shown to be efficacious in treating obsessive-compulsive disorder, smoking addiction and alcohol dependence. Experimentally administered or naturalistic use of psychedelics have also been linked to improvements in mood, prosocial behaviour and empathy, cognitive flexibility and creativity, openness, and mindfulness-related capabilities, among other changes outside of clinical focus. Despite these exciting prospects, enthusiasm must be controlled, with many limitations in the field present. Specifically, while athletes will become more aware of these treatments which have attracted wide scale public

KEYWORDS

mental health; wellbeing; psychedelics; psychotherapy

interest, extreme caution must be exercised in the field of sport psychology and psychiatry, due to unresolved questions regarding performance and safety. Nevertheless, this impending wave will inevitably break on the field of clinical sport psychology eventually, and as a field we must be ready to manage these challenges and opportunities. In this talk, I will overview evidence for psychedelic treatments, their potential value for athletes, and the significant unresolved challenges that lay ahead.

Can psychological skills training reduce perfectionistic cognitions in athletes?

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ABSTRACT

Psychological support is an essential part of sport with psychological skills training (PST) among the most commonly used and effective forms of psychological assistance delivered by sport psychology practitioners. It is thought that athletes who have higher levels of perfectionism are more at risk of mental ill-health and performance related problems and could therefore benefit from this type of support. As such, the purpose of the present study was to assess the effectiveness of a PST intervention in reducing perfectionistic cognitions and other related outcomes in athletes. Using a single-subject multiple baseline research design, we recruited five national level basketball players (M age = 21.8, SD = 3.5) on the basis of higher pre-existing levels of perfectionistic cognitions. All participants received eight, one-to-one PST sessions over a 4-week period. The intervention included a focus on goal setting, imagery, relaxation, and self-talk. To supplement the intervention and enhance adherence, homework tasks were also given at the end of each session. Participants completed self-report measures of perfectionistic cognitions (Perfectionistic Cognitions Inventory-10; Donachie, Hill, & Hall, 2018), emotions (Sport Emotion Questionnaire; Jones, Lane, Bray, Uphill, & Catlin, 2005), appraisals (Appraisal of Life Events Scale; Ferguson, Matthews, & Cox, 1999), and performance satisfaction (single-item) on a weekly basis, before, during, after the intervention (15 weeks in total), and 3-months later. To analyze the data, we used both visual analysis (observing data points and step changes from pre to post) and statistical analysis (Cohen's d). Social validation interviews were also conducted. Results suggested that PST increased performance satisfaction, reduced negative appraisals, and reduced negative emotions in all participants. However, fewer changes were observed for perfectionistic cognitions and positive emotions. The findings support the use of PST for enhancing performance satisfaction and reducing negative appraisals and emotions in perfectionistic athletes, but not in reducing perfectionistic cognitions. This is a novel and important research finding with clear implications for sport psychology practitioners

KEYWORDS

perfectionism; PST;
performance; cognitions

in sport. However, sport psychology practitioners are urged to show caution whilst supporting perfectionistic athletes. In particular, in order to support perfectionistic athletes, sport psychology practitioners may need to move beyond the use of traditional PST.

Experiences of female sport psychologists working in elite english soccer

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ABSTRACT

According to Philips and Newland (2014), sports such as soccer are becoming environments without social parameters beyond that of their own context, remiss of funding limitations which arise in sports which rely on for example, lottery funding. Moreover, soccer is often reported as a brutal male dominated environment resulting in gender inequalities which perpetuate harassment (Hindman et al., 2020). To date, little is known about female sport scientists experience of operating in such contexts. The purpose of the current study was therefore, to examine female sport psychologists' experiences within English elite male soccer. Following ethical approval, an interpretivist design was undertaken. 9 females (n=1, HCPC registered, n=1, BPS registered, n=4, BASES accredited, n=2, neophytes and n=1, didn't specify) were purposively selected to represent key demographic differences. Years of experience ranged from 6 months to 20 years. Ages ranged from 25 to 40 and all were educated to a minimum of a master's level degree. Semi-structured interviews lasting on average 120 minutes were transcribed verbatim and analyzed via thematic analysis (Jones 2015). Results revealed five higher order themes, 1) soccer environment comprising of three lower level themes (gender neutral experiences, lad culture and ology versus gender). 2) Being female, consisted of female roles, embracing femininity and male dominated environment. 3) Perceptions and behaviors were divided into, those within the sport versus those outside the sport. 4) Support and facilities consisted of support for yourself, supporting others and facility availability. 5) Characteristics associated with being successful comprised of individual disposition, philosophy and authenticity and passion for the sport. Results showed, the elite soccer context has grown over the past 15 years to become more accepting of females in relation to the roles they hold and subsequent access to support and facilities. Whilst soccer was still reported as male dominated, many of the females were able to embrace their femininity, whilst at the same time excepting, they were entering a male space, therefore a lad culture was to be expected. Thus, participants reported given characteristics were needed to be successful in the environment, but not only for females. Many reported being included in banter was a sign of acceptance not harassment. However, there were still individual instances of blind

KEYWORDS

Sport Psychology; Gender; Inequality; Soccer; Culture

discrimination. It was concluded that sexism and discrimination was not institutionalized but individual experiences were still occurring. Future recommendations therefore focused on education surrounding how to work with females entering the male space.

A mixed-method exploration of the impact of gender on playing experience and athlete burnout in gaelic games

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ABSTRACT

Athlete burnout is characterised by physical and emotional exhaustion (PEE), reduced sense of accomplishment (RSA) and sport devaluation (SD). Limited research has examined burnout in female team-sport athletes, while research across sports has found mixed-results on the impact of gender on burnout. As females are relatively new entrants into many traditionally male-dominated team sports, such as soccer, rugby and Gaelic games (team sports native to Ireland), they may experience unique challenges which could impact feelings of burnout. This study aimed to assess whether players felt their gender impacted their experience of playing Gaelic games, to examine the relationship between both gender and its perceived impact on feelings of athlete burnout, and to explore and understand the ways in which athletes feel gender impacts their playing experience. As part of a larger project on burnout in Gaelic games, we conducted an online survey which assessed burnout and asked whether players felt their gender impacted their playing experience. Gaelic games players aged 18 or over were eligible for participation. Players were also invited to participate in semi-structured online interviews to further explore their experiences of the role of gender in their sport participation. Quantitative data was analysed using descriptive statistics and non-parametric tests. Thematic analysis was used to analyse qualitative data. 178 male and 192 female Gaelic games players completed the survey. No significant gender differences in burnout were identified. 84% of females indicated that gender impacted their playing experience; 94% reported a negative impact. 15.7% of males indicated that gender impacted their playing experience; 96.4% reported a positive impact. Female athletes who reported an impact of gender on playing experience had significantly higher levels of PEE and SD than those who did not perceive an impact of gender. There were no significant differences in burnout across male athletes. Examining data from the 8 male and 6 female interviewees, we identified the following themes relating to the role of gender in their experience of sport; 'less opportunities for female players', 'less support for female players', 'unique pressures experienced by female players' and 'shared experiences of male and female players'. This mixed-methods analysis gives important insight into the role of gender in team sports; while athletes of both genders report some commonalities in their

KEYWORDS

Athlete Burnout; Gender; Mixed-methods; Team sports

experiences, continued gender inequality in team sports remains an issue, and female athletes who experience the impact of these inequalities are more likely to experience symptoms of burnout.

Cultural differences in self-appraisals and satisfaction in sport settings

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ABSTRACT

Higgins' (1997, 1998) regulatory focus theory posits that there are two motivational strategies. One is promotion-focus, where individuals focus on maximizing positivity such as gains or success. The other is prevention-focus, in which individuals minimize negativity such as losses or failure. A plethora of cultural psychological research demonstrated that North Americans show promotion-focus, while East Asians display prevention-focus. This difference has been explained by self-construal. People in western society tend to be independent. The society emphasizes on competence and self-esteem. This leads people to pay attention to positivity such as gains and success. On the other hand, people in East Asia tend to be interdependent. In this society, maintenance of face is important, and they pay more attention to minimizing losses or failure because maintenance of face is difficult to build, but easy to lose. This study examined if this cultural difference can be applied to sport context. It is hypothesized that Canadians are easier to come up with their strengths, pay more attention to strengths and are satisfied with their performance due to their promotion-focused orientation, while Japanese people show opposite results based on their prevention-focused orientation. 53 Japanese soccer players and 49 Canadian soccer players participated in the study. They completed a questionnaire to measure regulatory focus (Lockwood, et al., 2002). Next, they were asked to come up with their weaknesses and strengths as a soccer player (15 attributes at maximum for each). Afterward, they were asked to rate how much they paid attention to each attribute in practices and games. They also answered how satisfied they were with their performance. According to the results, Canadian soccer players showed significantly higher promotion focus and lower prevention focus than Japanese soccer players. Canadian soccer players came up with their strengths significantly more than Japanese soccer players. However, there was no significant difference in weaknesses. Canadian soccer players paid significantly more attention to their strengths than weaknesses while the Japanese soccer players showed no significant differences. Lastly, the Canadian players felt significantly higher satisfaction in their performance than the Japanese players. These results indicate that Canadian soccer players are more focused on positivity as a soccer player while Japanese soccer players focus evenly on both negativity and positivity. These results are

KEYWORDS

cultural psychology;
regulatory focus theory; self-
enhancement

significant from a practical point of view in that coaches in each culture can understand how they should communicate with players.

The effects of EEG/Neurofeedback training on sport-related performance in athletes: a systematic review and meta-analysis

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ABSTRACT

Neurofeedback is a non-invasive technique, its for train individuals to produce brain activation patterns that might be conducive performance. In recent studies, the effectiveness of neurofeedback has been evaluated not only in the clinical population, but also for its enhancement of performance in general. The present study aimed to provide an overview of studies evaluating the effectiveness of neurofeedback training (NFT) on sport-related performance and electroencephalography (EEG) power in athletes, and to scrutinize the methods and results of these studies. A computerized search of Web of Science, Scopus, and PubMed was performed to identify relevant studies published between 1991 and May 1, 2021. The outcome measures were sport-related performance and EEG power. Two review authors identified eligible studies and independently extracted data. A systematic review was conducted using PRISMA methodology. The protocol was registered on PROSPERO (ID: CRD42021238399). A total of 19 randomized controlled trial studies (502 athletes, 16-35 years) met the inclusion criteria. The neurofeedback bands measured included SMR (12–15 Hz), alpha (8–12 Hz), theta (4–8 Hz), and SCPs (0.5–2 Hz). The numbers of interventional sessions ranged from 1 to 20 sessions with durations ranging from 20 to 75 min per session. Only 7 studies used an active/placebo control group, such as incorrect feedback and mock feedback. The current study provides an overview of RCT studies examining the effects of neurofeedback on sport-related performance and EEG power and evaluates these studies against cardinal and methodological criteria. Future efforts should focus on valuations of neurofeedback training in sports and ensure EEG data be paired with performance data. This study also recommended that NFT be designed with sport-task situational specificity and conducted on the field of play rather than in solely in the lab.

KEYWORDS

Neurofeedback training;
Sport performance; EEG

The effect of sensory motor rhythm neurofeedback training on elite archers

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ABSTRACT

Neurofeedback has been proved to improve performance of different types of sports. However, there has been little empirical research using neurofeedback to improve archery performance. As literature suggested, attention plays the key role to determine archer's performance in addition to the shooting skills. Therefore, this study was designed to examine the effect of SMR training on archers' attention as well as the shooting performance. Moreover, we designed a hybrid training methods with the initial 1st-6th visuo-auditory sessions, followed by 7th-8th auditory sessions, and the 9th-12th ecological valid auditory-with-shooting sessions. As for outcome measurements, we adopted event-related potentials (ERPs) with attentional network test (ANT) and continuous performance test (CPT) in addition to the shooting performance to examine the validity of neurofeedback. Thirteen elite college archers were recruited. Both shooting performance and ERP tasks were carried out to examine the training effect. Interestingly, statistic results showed that there is a linear improvement of archery performance from 9th to 12th sessions, however, no significant difference between pretest and posttest. As for the ANT performance, participants showed better inhibition control, reflecting on the reduced congruency effect in RT. Also, we observed an enlarged N2 amplitude of congruent trials as well as decreased N2 amplitude of incongruent trials, indicating participants were less affected by flankers after training. Moreover, an increase error-related positivity (Pe) was observed, indicating participants were more aware of the error. In the CPT, false alarm rate was reduced after training, although there was no significant difference on ERPs. Taken together, we demonstrated elite archers improved their performance only when the feedback was externally provided. Furthermore, we argued SMR training enhance the attention capacity, especially the focused attention and inhibition control. In conclusion, our results suggested that SMR neurofeedback might be an effective method to improve elite archers' performance through attention enhancement. Further limitation will be discussed.

KEYWORDS

archery; neurofeedback; SMR; attention

The effects of mindfulness on athlete burnout, subjective wellbeing and flourishing among elite athletes: a test of multiple mediators

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ABSTRACT

In the past 20 years, there has been a growing interest in studying mindfulness in sporting contexts (Gardner & Moore, 2020). Mindfulness practice within mindfulness-based interventions has been used to help athletes improve mindfulness abilities, enhance sport performance, and promote adaptive outcomes. To better understand how and why mindfulness-based interventions work, it is important to examine the mechanisms underpinning the effects of mindfulness on performance and adaptive and maladaptive outcomes. The current study aimed to examine the mediation effects of experiential acceptance, cognitive defusion, decentering, and nonattachment on the paths from mindfulness to athlete burnout, subjective wellbeing, and flourishing among elite athletes. Elite athletes refer to athletes who compete as Olympians, professional athletes and collegiate athletes who train and compete like professional athletes (Reardon et al., 2019). In the current study, we focused on professional athletes. Chinese elite athletes ($n = 515$; 225 females) were recruited from three provincial sports centers representing 22 sports. Participants completed the self-reported measures of mindfulness, experiential acceptance, cognitive defusion, decentering, nonattachment, athlete burnout, subjective wellbeing, and flourishing. Path analyses was conducted to test the mediation effects from mindfulness to athlete burnout, subjective wellbeing, and flourishing. Path analyses revealed that the effect from mindfulness to athlete burnout was mediated by experiential acceptance, cognitive defusion, and nonattachment, but not decentering. The effect from mindfulness to subjective wellbeing was mediated by decentering, cognitive defusion, and nonattachment, but not experiential acceptance. The effect from mindfulness to flourishing was mediated by decentering and nonattachment, but not experiential acceptance and cognitive defusion. Findings from this study provided empirical support for the changing mechanisms regarding how mindfulness leads to adaptive and maladaptive outcomes, which can inform future mindfulness-based interventions for elite athletes. This research was supported by the National Natural Science Foundation of China (NSFC; No. 31800948).

KEYWORDS

Cognitive defusion;
Decentering; Experiential
acceptance; Nonattachment;
Sport

A qualitative study on the the impact of body image to exercise participation of transgender women

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ABSTRACT

There is equivocal evidence that physical activity is beneficial to physical and psychological health of all individuals. However, studies have reported that transgender individuals have low physical activity levels despite the known benefits of exercise participation. One reason was the influence of body image on exercise participation of transgender people. Body image has been defined as how a person perceives, thinks, and feels about his or her physical appearance. The relationship between body image and physical activity participation is manifested in some related issues, such as weight management, appearance, and body dissatisfaction that have all been categorized as either a motivator or barrier to physical activity engagement as cited by previous studies. With the evident benefits of physical activity and the reported psychological barrier with engaging in it, specific to this population, there is a need to look into this in the context of the experience of Filipino transgender women. This research determined the relationship between the body image and exercise participation of transgender women, based on their own perceptions. To answer the research questions, semi-structured interviews were conducted with six transgender women (21-35 years old), who had undergone medical transitioning from being male to female. Responses were transcribed and content-analyzed for common themes. Barriers and motivators to exercise participation were identified in the results. Research participants were motivated to engage in physical activity to increase body satisfaction, improve overall fitness, and achieve gender congruence. Despite this motivation, internal (e.g., negative body image) and external (e.g., changing facilities) barriers hinder them to participate in physical activity. Moreover, results also showed that respondents found it difficult to be physically active because of the distressing environment that is sometimes experienced or anticipated in public exercise spaces (e.g., workout gyms). Further studies are recommended to look into the barriers identified. In order to facilitate continued engagement in physical activity and support the motivation of transgender women, efforts should be initiated to increase awareness to make the exercise environment safe and equitable for both transgender and cisgender populations.

KEYWORDS

Body Image; Exercise Participation; Transgender Women

Long-term association between physical activity, weight regain, metabolic risk factors and quality of life, in patients undergoing bariatric surgery

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ABSTRACT

Introduction: Bariatric surgery is nowadays considered a safe and effective long-term procedure for the treatment of obesity and its comorbidity and is increasingly the treatment of choice for people with obesity, with other associated pathologies. We know

KEYWORDS

bariatric surgery; metabolic risk factors; life quality; weight regain; physical activity

that physical activity is important after a successful weight loss, however, and especially in bariatric surgery, the characteristics of physical activity for the prevention of weight gain are not consensual, since the variations are immense from individual to individual. Currently there are no specific recommendations for people with obesity under-referred to bariatric surgery, whether pre-surgery or post-surgery, and the recommendations that exist include only guidelines for obesity in general, evidence suggests that weight gain tends to increase as a time increase after bariatric surgery. However, there are few studies on the factors associated with weight gain after 5 years of intervention. The aim of this study will be to analyze the association between physical activity, weight gain and quality of life in patients undergoing bariatric surgery, in order to answer the research question: does the practice of physical activity influence weight gain, metabolic risk factors and quality of life. Method: A systematic review was conducted with the objective of analyzing the long-term association between physical activity, weight gain, metabolic risk factors and life-related factors in patients undergoing bariatric surgery, in which the Pubmed database was used. Randomized controlled studies, controlled clinical studies, cohort studies and cross-sectional studies written in English and Portuguese. We found 1279 studies possibly relevant and included in the review 8 studies, six observational and two randomized clinical trials, where the quality was well considered. The search terms were based on "physical activity", "bariatric surgery", "weight regain", "metabolic risk factors", "quality of life". Results: Despite the different methodological specificities, there was a positive association between physical activity and weight gain, as well as in quality of life and metabolic risk factors. Conclusions: Bariatric surgery induces a significant weight loss in the first year after surgery, which, when assisted with the practice of physical exercise, is maintained by the consecutive years. Quality of life and comorbidities associated with obesity are directly linked to weight loss. For better conclusions, further experience studies will be needed to address and overcome the aforementioned limitations.

Psychology of physical activity: determinants, well-being, and interventions – a 30-year reflection

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ABSTRACT

The first English language authored textbook on exercise psychology was published 30 years ago by Springer (Biddle & Mutrie, 1991, *Psychology of Physical Activity & Exercise*). This led to a new version from Routledge 10 years later (Biddle & Mutrie, 2001, *Psychology of Physical Activity*), and subsequent editions in 2008 and 2015, and now 2021 (Biddle, Mutrie, Gorely & Faulkner,

KEYWORDS

exercise psychology; trends; determinants; mental health; interventions

2021, 4th Edition). It has received over 2,000 citations according to Google Scholar. The systematic study of psychological issues associated with health-related physical activity – later to emerge as the sub-field of ‘exercise psychology’ – can be traced back to several landmarks across different countries. Essentially, after the documentation of mental health effects of physical activity in the 1960s, it was in the 1980s that the field gained recognition and acquired the label ‘exercise psychology’. Typically, the field of exercise psychology recognises the major domains of psychological antecedents of behaviour (e.g., correlates/determinants), the psychological outcomes of participation (e.g., ‘mental health’), and the role of psychology in physical activity behaviour change (e.g., intervention design and implementation). Psychological theory cuts across all three domains. With the publication of the 4th edition of our book this year, it allows for a 30-year retrospective view of changes in this field of study. In this presentation, selected trends and issues will be discussed, some being contentious. The first will be the understanding of psychological correlates of participation, with a focus on selected barriers and motives, as well as the commonly reported variable of enjoyment. Common understanding of the time barrier, as well as the reporting of motives and enjoyment, will be challenged and suggestions for knowledge advancement offered. Second, trends in the psychological health outcomes (cognitive and mental) will be discussed, including the rise in the role of cognitive functioning. The issue of establishing causality of association between physical activity and mental health will be presented in brief. Finally, the interplay of psychological and non-psychological factors in intervention design and evaluation will be considered (e.g., use of theory in intervention design and the understanding of behaviour change through process evaluation). Illustrations and content will reflect our changes in understanding across the 30 years of the textbook publication process with a view to informing early, mid and later career psychologists interested in the field of physical activity for health.

Motor complexity modulates the acute effect of coordinative exercise on cognitive control

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ABSTRACT

Purpose: Although acute coordinative exercise has recently been suggested to be an effective way for temporarily improving cognitive control, less is known whether the inherent motor complexity in coordinative exercise modulates such an effect. To further address this issue, this study adopted a between-subjects pre-post design to directly examine whether motor complexity

KEYWORDS

Acute exercise; Proactive control; AX-Continuous performance task (AX-CPT); Event-related potentials (ERPs)

modulates the effect of acute coordinative exercise on proactive cognitive control process. Further, we used electroencephalographic (EEG) to explore the underlying mechanism of behavioral performance in response to acute coordinative exercise. Method: Twenty-four subjects were recruited from the general college student population, randomly assigned to a low complex exercise group ($n = 12$, 20.53 ± 1.31 years) and high complex exercise group ($n = 12$, 21.6 ± 1.86 years), and asked to complete an AX-CPT task with concurrent EEG recording before and after a single bout of 20 min exercise to evaluate the acute change in cognitive performance. In terms of EEG, we employed the contingent negative variation (CNV) component of event-related potentials (ERPs) to probe the neural mechanisms underlying proactive control process. Result: The behavioral observation showed that reaction time was faster for the BX condition following exercise, regardless of exercise group. However, we found that the high complex exercise group maintained BX condition accuracy performance and impaired AY condition performance following exercise, indicating a trend for more dominant proactive control. In contrast, such an effect was not observed in the low complex exercise group. On the other hand, the ERPs results showed that the high complex exercise group exhibited increased frontal CNV during the processing of A cue conditions following exercise, whereas no such difference was observed for the low complex exercise group. These findings may suggest that the coordinative exercise demanding higher level of motor complexity may induce a greater modulation of neural activity associated with proactive control process. Conclusions: We concluded that acute coordinative exercise demanding high level of motor complexity may temporarily increase proactive control process, as reflected by the strengthened proactive control-related neural index (i.e., frontal CNV). The present study provides further support for the role of motor complexity in modulating the acute effect of cognitive changes following coordinative exercise.

Physical activity and aspects of health in male and female university students under community quarantine

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ABSTRACT

Numerous researches have shown the positive benefits of physical activity on various health states of an individual. However, the unprecedented occurrence of the global pandemic has changed people's way of life that resulted in various physical, emotional, mental, social, and spiritual health impacts. This study examined the relationship between physical activity and aspects of personal health in male and female university undergraduate students. It also identified similarities or differences in students' health

KEYWORDS

Filipino students; physical activity; IPAQ; COVID19; community quarantine

conditions based on gender. A total of 1550 Filipino male and female university students volunteered to participate in the study. There were 714 (46.1%) males and 836 (53.9%) females. Students were requested to fill out the International Physical Activity Questionnaire (IPAQ) short version to determine their level of physical activity and sedentary behaviors prior to the city government's implementation of the community quarantine regulations. Participants were also asked to rate their physical, emotional, mental, social, and spiritual states while in community quarantine. Non-parametric correlation results showed that vigorous and moderate physical activities were significantly and positively associated with physical, emotional social and spiritual health in male students. However, mental health did not show any relationship with moderate and vigorous physical activity participation. On the other hand, only the physical aspect of health was significantly and positively related to vigorous and moderate physical activity in female students. Sitting behaviors during weekdays and weekend were significantly but negatively associated with aspects of health in both genders except for spiritual and mental aspects of health and weekdays-sitting in males and social aspect of health and weekday- and weekend-sitting in females. Moreover, t-test results showed that while in quarantine, male students had better emotional and mental states than females. In contrast, female students showed higher level of spiritual state than their counterparts. The findings indicate that previous moderate and vigorous levels of physical activities can serve as buffers against the impact of community quarantine on university students' well-being and the latter's effects may vary depending on gender. Educational interventions about the value and benefits of participating in moderate and vigorous physical activities in achieving overall wellness as well as self-management skills training for students are encouraged particularly in female students.

The effects of environmental factor on aerobic exercise-induced neurocognitive changes during cognitive control

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ABSTRACT

Introduction: Previous studies have shown that aerobic exercise is beneficial for cognitive functioning both in terms of behavioral and neural levels, with evidence showing better cognitive performance following aerobic exercise intervention. According to the Adaptive Capacity Model (ACM), exercise-induced cognitive gains may increase when combined with simultaneous cognitive stimulation, highlighting the important role of environmental enrichment during exercise. However, little is known about the extent to which environmental enrichment modulates the cognitive gains of aerobic exercise. Purpose: This study was designed to investigate the effect of exercise

KEYWORDS

exercise environment; aerobic exercise; cognitive control; event-related potential

environment on exercise-induced neurocognitive changes. Method: Forty-two participants were recruited and randomly assigned into an outdoor exercise group (OE) ($n = 21$, aged 21.14 ± 1.01 years) and an indoor exercise (IE) group ($n = 21$, aged 21.43 ± 1.33 years), respectively. The 4-week exercise program consisted of 3 sessions of 5-km running at moderate-to-vigorous intensity per week. During each running session, the IE group ran on a treadmill whereas the OE group ran outdoor concurrently with the route manipulation to induce cognitive stimulation during exercise. A progressive aerobic cardiovascular endurance run (PACER) test and a flanker task with concurrent electroencephalography (EEG) recording were used to evaluate exercise-induced changes in aerobic fitness and cognitive functioning. Furthermore, we analyzed the difference waveform (i.e., incongruent condition subtracted from congruent condition) of event-related potential (ERP) and extracted the amplitude measure of P3d component to examine the neural correlates of cognitive control. Results: Our findings showed that after 4-week intervention the aerobic fitness of both groups were significantly improved. Although both groups obtained similar level of facilitation in their aerobic fitness, only for the OE group, their response times speeded up after the exercise intervention, whereas such an effect was not observed for the IE group. We also observed that the exercise-induced stronger cognitive modulation of P3d amplitude for the OE group after the exercise intervention, while such an effect was weaker for the IE group. Conclusion: In conclusion, our findings suggest that enriched exercise environment can result in differential patterns of exercise-induced neurocognitive changes, supporting the ACM. The present study highlights the importance of considering exercise environment and cognitive stimulation to maximize exercise-induced cognitive benefits.

Promotion of physical activity at the workplace: an analysis of intervention programs that won the C. everett koop national health award

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ABSTRACT

Introduction: Physical activity and exercise are generally promoted for their positive effects on health and well-being. Many successful physical activity programs have been implemented at the workplace. These programs are not necessarily theory-driven, nevertheless, they can inform theory and provide valuable implications. Purpose: The aim of this study was to review outstanding health promotion programs that included a physical activity intervention, and analyze the interventions on their functional orientations based on the awareness-motivation-skill-opportunity (AMSO) model (O'Donnell, 2005). Method: Sixty-three

KEYWORDS

Physical activity; Promotion; Intervention; Workplace; AMSO model

programs that won the C. Everett Koop National Health Award were examined using a systematic review methodology. An important requirement of the Koop Awards is that winners are able to document results, both in terms of health improvement and economic impact, indicating that these programs have proven effective. Results: Overall, the programs included 366 separate interventions that were used to promote physical activity and exercise. Of them, 31% focused on improving people's awareness of physical activity benefits (e.g., health brochures, wellness calendar), 25% directly targeted people's motivation to exercise (activity-based incentives, peer support), 9% aimed at building exercise skills (instructor-led classes, technology feedback), and 35% comprised opportunities to physical activity and exercise provided by the management (onsite fitness facilities, walking architecture). A chi-square goodness of fit test revealed that the proportions of the AMSO factors differed significantly from the theoretical AMSO model ($p < .001$). Conclusion: The findings are in line with the AMSO model that providing opportunities to exercise is the most relevant factor for successful physical activity promotion. In contrast, the focus on increasing awareness is underrepresented, and the focus on building skills overrepresented, in the theory when compared with what has been applied in the practice.

The effects of barbell resistance exercise on P3 ERP in older adults: a crossover, active control RCT

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ABSTRACT

Introduction: The effect of resistance exercises on P3 event-related potential (ERP) is difficult to conclude from previous studies due to the lack of randomized design studies with active controls. Purpose: To evaluate the effect of barbell resistance exercise protocol on P3. Method: A total of 24 healthy older males (aged 50-65 years old) who exercise regularly were randomly allocated to sequences; 10 participants performed resistance exercises before a sham intervention. The number of participants included in ERP analysis was 21 for P3 positive area (2 participants did not complete the intervention, and one participant's ERP data was excluded because of bad channels); 20 for P3 fractional area latency (another participant's result could not be calculated). The intervention was a single bout of multiple joint, structural barbell resistance exercises (order: back squat → press → deadlift) with 75% 1RM × 5 repetitions × 3 sets, with 2-3 minutes rest between sets and exercises or an active control intervention (stretching exercise). The cognitive tasks required about 25 minutes to complete, and were administered 5 minutes before and 10 minutes after the intervention. Computer-generated unrestricted randomization of intervention sequence (ratio = 1 : 1) was used for randomized crossover. Participants were blinded by an active

KEYWORDS

Resistance training;
Kinesiology; Cognition;
Inhibitory control;
Randomized controlled trial

control exercise intervention (stretching) and sham physical tests (flexibility test). All EEG and ERPs data were recorded and analyzed according to standardized criteria, not involving human judgment. Results: Despite the results showing larger P3 amplitude in the parietal lobe than in other areas of the brain, which is consistent with traditional findings, the effects of barbell resistance exercise on P3 positive area (amplitude) in congruent, ($t(20) = -0.418$, $p = .681$, $M = -0.161 \mu\text{v}$, 95% CI [-0.967, 0.644]), and incongruent conditions ($t(20) = -0.135$, $p = .894$, $M = -0.041 \mu\text{v}$, 95% CI [-0.679, 0.596]), and P3 fractional area latency in congruent ($t(19) = 0.185$, $p = .855$, $M = 2 \text{ ms}$, 95% CI [-21, 25]) and incongruent conditions ($t(19) = 0.153$, $p = .880$, $M = 2 \text{ ms}$, 95% CI [-29, 33]) did not significantly differ from the effects of stretching exercise. Discussion: This acute RE protocol did not significantly alter P3. The resistance exercise intensity may have been too high for increasing P3 amplitude in untrained older adults. Funding: Ministry of Science and Technology (Taiwan). Trial registration: NCT04534374.

The impact of physical activity on psychological well-being during the Covid-19 pandemic: an evidence from adults in Indonesia

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ABSTRACT

The Covid-19 pandemic has changed the life habits of most of the people in the world, including Indonesia. It not only affects health aspects which at a certain level can threaten safety but also has implications for social and economic aspects due to restrictions on mobility and termination of employment. As a result, psychological stresses such as burnout, staleness, and depression are daily conditions that are difficult for individuals to avoid. Therefore, activities that can relax these psychological pressures become a necessity. This study aims to examine the effect of physical activity as reflected in frequency, duration, and intensity on psychological well-being, which is reflected in the dimensions of physical health, self-confidence, social relations, and happiness. The total number of participants was 596 respondents aged 30-80 years ($M = 46.06$; $SD = 11.10$), consisting of 51% male and 49% female. Data were collected using a questionnaire and carried out through an online survey. Data were analyzed using the Structural Equation Modeling (SEM) method. The ultimate goal of SEM is to produce a theoretical model, which is a summary theory that describes the interrelations between variables that are usually expressed in mathematical formulations. The results showed that the theoretical model explaining the structural relations between physical activity and psychological well-being was fit with empirical data ($RMSEA = 0.08$; $NFI = 0.94$; $CFI = 0.94$). This means that physical activity has a positive impact on

KEYWORDS

Covid-19 Pandemic; Physical Activity; Psychological Well-being; Gender Differences

increasing psychological well-being. In physical activity, intensity and frequency factors are more dominant than duration factors. The effect of physical activity on psychological well-being in order is the dimensions of happiness, self-confidence, physical health, and social relations. There is a gender difference in terms of psychological well-being, the male group was higher than the female group. It could be because the level of participation of females in physical activity is relatively low. The findings of this study are urgent to deal with a situation of change and uncertainty that occurs due to the Covid-19 pandemic which will somehow end. Saturating and stressful conditions make many people face an immune deficit that is vulnerable to this deadly Covid-19 infection, especially for those over 50 years old. Based on these findings, it is suggested that there be a more massive movement, especially targeting women's groups by involving all stakeholders such as government, private sector, and volunteers, to promote physical activity as an easy and inexpensive way to obtain psychological well-being.

How the COVID-19 pandemic has changed our physical activity habits

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ABSTRACT

Habits, defined as well-learned associations between cues and behaviours, are essential in the regulation of physical activity (PA). Despite the sensitivity of habits to context changes, little remains known about the influence of a context change on the interplay between PA habits and behaviours. In this study, we drew on the example of the Spring COVID-19 lockdown in France and Switzerland to examine the evolution of PA habits following such a major context change. Moreover, following the discontinuity and self-activation hypotheses, we examined the association of PA behaviours and autonomous motivation with this evolution. Using a three-wave observational longitudinal design, PA habits, behaviours, and autonomous motivation were collected through online surveys in 283 French and Swiss participants (age = 40 ± 18 years, 60% women; 73% French). Variables were self-reported with reference to three time-points: before-, mid-, and end-lockdown. Variables related to the before-lockdown period were retrospectively measured at the first wave of measurement, about two weeks after the beginning of the lockdown. Mixed effect modelling revealed a global decrease in PA habits from before- to mid- lockdown ($B = -.16$, $p < .001$), especially among individuals with strong before-lockdown habits ($B = -.30$, $p < .001$). In contrast, participants with weak before-lockdown habits reported an increase in PA habits from before-

KEYWORDS

Physical activity; Habits; Context change; Autonomous motivation; COVID-19

to mid-lockdown ($B = .58, p < .001$), but this increase was decelerated from mid- to end-lockdown ($B = -.51, p = .002$). Path analysis showed that before-lockdown PA habits were not associated with mid-lockdown PA behaviours ($B = -.02, p = .837$), while mid-lockdown PA habits were positively related to end-lockdown PA behaviours ($B = .23, p = .021$). Autonomous motivation was directly associated with PA habits ($ps. < .001$), to before- and mid-lockdown PA behaviours ($ps. < .001$) (but not to end-lockdown PA behaviours) and did not moderate the relations between PA behaviours and habits ($ps. > .072$). Our findings suggest that PA habits were altered following this context change, especially among individuals with strong before-lockdown habits. On the contrary, as proposed by the discontinuity hypothesis, individuals with weak before-lockdown habits may have taken advantage of this context change to develop PA habits. Although the effect of PA habits on behaviours was impeded during the COVID-19 lockdown, engagement in PA behaviours and autonomous motivation helped in counteracting PA habits disruption. Our study raises theoretical and practical implications regarding the promotion of PA following a context change.

Psychosocial outcomes of sport participation for middle-aged and older adults: a systematic review and meta-analysis

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ABSTRACT

Recent narrative reviews indicate that sport participation may provide several psychological and social benefits for the ageing population. However, no quantitative synthesis of the literature regarding the magnitude of such benefits has been conducted to date. Therefore, our objective was to conduct a systematic review and meta-analysis to synthesise the evidence statistically, for moderators to be tested to explain heterogeneity in effects, and to provide estimates of the quality of the evidence base, publication bias, and statistical power of the effects of sport participation on psychosocial outcomes for middle-aged and older adults. A literature search of ten databases (CINAHL Plus, Cochrane Library, Medline (Ovid), PsycINFO, PubMed, Scopus, SPORTDiscus, Web of Science, ProQuest Dissertations & Theses, and Google Scholar) was conducted in July 2020. Studies were eligible for inclusion if they were quantitative studies of middle-aged and older adults (> 35 years), measuring at least one psychosocial outcomes of sport participation. Through a two-step selection process (title and abstract screening followed by full-text review), we identified 25 eligible papers. We conducted a three-level random-effects meta-analysis, in order to account for dependencies between effect sizes and to allow for separating

KEYWORDS

sport participation; mental health; psychological well-being; psychosocial outcomes; ageing

variances that could occur at three different levels (i.e., sampling variance of individual effects, variance between ES's from the same study, variance between studies). Our multilevel meta-analysis showed that the association between sport participation and psychosocial outcomes was small, yet significant (g [95% CI] = .33; [.16, .50]). Moderation analyses revealed that the overall pooled effect differed according to outcome type: small to moderate associations were observed for social (g = .51 [.21, .81]), positive psychological (g = .45 [.22, .68]), perceived physical (g = .43 [.21, .65]), and cognitive (g = .25 [.00, .50]) outcomes, but not for negative psychological outcomes (g = .01 [-.24, .26]). Risk of bias, assessed using the QualSyst tool, suggested that the quality of evidence was low. The present meta-analysis demonstrates that sport participation is associated with multiple psychosocial benefits for middle-aged and older adults – primarily social, positive psychological, and perceived physical ones. These benefits seem invariant across participant-related and sport-related characteristics. We found no evidence of publication bias, but the studies were underpowered and rated as low quality. Our review provides evidence for policy aiming to encourage sport participation among adults.

Acute HIIE improves food-related inhibitory control among obesity male adults

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ABSTRACT

Obesity is a global public health problem, which is associated with adverse physical disease and cognition impairment. Inhibitory control as one of the crucial domains of cognitive function plays a role to inhibit excessive eating behaviors to maintain a healthy weight. Previous studies have reported a moderate inverse effect size for inhibitory control deficits among obese individuals. High-Intensity Interval Exercise (HIIE) as a popular and emerging exercise mode worldwide, has been shown to have positive impacts on physical fitness and cognitive function. However, there has been limited research conducted to examine the effects of HIIE on inhibitory control among obese adults, particularly in food-related inhibitory control. The purpose of the study was to examine the influence of acute HIIE on behavior and neural activity of food-related inhibitory control in obesity male adults. The study used a within-subjects design. Sixteen obesity [body mass index (BMI) > 28] male adults were recruited. Participants took part in a HIIE condition and a control condition in counterbalanced order. HIIE consisted of 30 minutes stationary cycle exercise (5-min warm-up, 20-min HIIE and 5-min cool down), whereas the control condition contained a time and attention-matched sedentary resting session. Reaction time and response accuracy of the food-related Flanker task as well as late

KEYWORDS

HIIE; Inhibitory Control; Food; Obesity; LPP

positive potential (LPP) were measured after the HIIE or the control condition. Results showed that faster response times were observed following HIIE regardless of Flanker task condition or food picture type, but no change in response accuracy. Relative to the neuroelectric data, acute HIIE resulted in increased LPP amplitude regardless of Flanker task condition or food picture type. In addition, the Fz site had the largest LPP amplitude than other sites. Collectively, a single bout of HIIE has a general beneficial effect on basic information processing and inhibitory control regardless of the high calorie foods or neutral objects. Acute HIIE was found to impact LPP amplitude, which may indicate that acute HIIE could successfully maintain attention as well as filter irrelevant information to achieve successful cognitive function. Additionally, the improvement of LPP amplitude may attribute to the increase of the recruitment of late cognitive resource and the activation level of brain frontal region.

Day-Level coupling of physical activity, sedentary time, and cognitive function in older adults: an ecological momentary assessment study

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ABSTRACT

Introduction: Cognitive impairment caused by neuropsychological diseases exact a toll on healthcare cost, wellbeing, and quality of life in older adults worldwide. Current findings concerning the beneficial roles of physical activity on cognition in older adults are predominately based on cross-sectional survey studies or limited in-lab cognitive assessments that fail to capture the dynamics underlying daily activity levels and cognitive function. There is a gap in understanding how active lifestyles (more physical activity and less sedentary behavior) impact older adults' cognitive function in everyday naturalistic settings. **Purpose:** This study applied real-time data capturing methods to investigate the day-level associations between physical activity, sedentary time, and cognitive function in older adults who are at risk for developing neuropsychological diseases. **Methods:** Older adults who had at least one neuropsychological disease risk factor were recruited from communities around the midlands of South Carolina between January and April 2021. Participants were instructed to wear an accelerometer for 14 consecutive days and complete three validated, brief cognitive tests up to five random times per day using a smartphone. The three cognitive tests involved the SymbolSearch task, the Grid Memory task, and the Go-NoGo task, all of which are performance-based measures targeting key domains sensitive to cognitive aging. Each cognitive test took approximately 45-60 seconds to complete. Accelerometry-derived metabolic equivalents (METs), steps, and time spent in sedentary behavior (sitting/lying down) were used

KEYWORDS

Ambulatory assessment;
Movement-based behaviors;
Within-person associations;
Cognitive aging; Mobile
technology

to predict cognitive function within the same day. Results: Three-level mixed-effects models were used to analyze 1,356 smartphone observations from 285 days provided by 24 older adults (Mean age = 40.3 years, SD = 9.71). Higher METs predicted better cognitive function (i.e., shorter processing speed, fewer errors, and more accurate trials) across the three cognitive tests ($p < .01$) within the same day. More daily steps predicted better cognitive outcomes in both the Grid Memory and Go-NoGo tasks ($p < .05$). Longer daily sedentary time predicted better cognitive outcomes in both the Symbol Search and Go-NoGo tasks ($p < .05$). All models controlled for key demographics, time trend, and potential practice effect of cognitive measures. Conclusion: Using objectively measured daily physical activity, sedentary time, and cognitive function, this study provided preliminary findings that higher physical activity levels and lower inactivity levels are associated with better cognitive health in older adults. Supporting findings from future studies can advance understanding of the links between lifestyle activities and cognition in everyday contexts, which, in turn, can inform strategies to promote and sustain healthy brain aging.

Basic psychological needs support from recreational resistance training practitioners in a social and sports club inside Brazil

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ABSTRACT

(Introduction) The Self-Determination Theory (SDT) points out to an innate tendency of the human being towards growth and flourishing when in contexts that promotes and supports the Basic Psychological Needs (BPN) of autonomy, relatedness, and competence in individuals. This theory, which is based on the assumptions of phenomenological theories, suggests that the human being tends to be curious, social, and active, when in a more positive and healthier framework, what refers to the importance to investigate how recreational resistance training practitioners perceive support for their BPN in social and sports clubs, so that to have a high turnover of physical exercise practitioners. (Purpose) To verify BPN support from recreational resistance training practitioners in a Social and Sports Club inside Brazil was the objective of this research. (Methods) Data were collected in a non-probabilistic sample from 40 individuals (25 males and 15 females, aged between 22 and 63 years, $\bar{x} = 39.5$ years old), during two weeks in May 2021, at a social sport club in São José do Rio Pardo, São Paulo, Brazil. As an instrument, it was

KEYWORDS

Basic Psychological Needs; Motivation; Recreational resistance training; Exercise instructors; Gyms

used a depth semi-structured interview built on through the Self-determination Theory perspective. To analyze the data, NVivo Release 1.0 software was used, athwart the assumptions of content analysis. (Results) As a main result, it was found that, in general, the practitioners perceive good support to their BPN, mainly through the instructors' mediation, who end up supporting the need for autonomy, by allowing these practitioners to designate exercises that they do not feel well when training, and that they can be replaced, without causing any major damage in relation to the practitioner's safety and objectives, generating a perception that training programs developed by the instructors are not controllers. This practice also ends up contributing to a greater perception of competence from the practitioners, who feel more apt to perform such exercises. Regarding the need of relatedness, support seems to come from each both practitioners and instructors. A good relationship with the other practitioners appears to be important to generate a greater sense of belonging, which can be amplified by the relationship with instructors, who look to promote more friendly and helpful climates to the inquiries and meeting different needs of these practitioners. (Conclusion) Supporting BPN can be an important strategy for improving the autonomous motivation of this population, resulting in greater engagement and permanence of these resistance training practitioners.

Motivation for professional practice in a social and sports club in Brazil: The self-determination theory perspective

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ABSTRACT

(Introduction) A good motivational atmosphere created in the workplace can contribute to the development of motivation, well-being and greater performance of employees. On the other hand, when this environment is hostile it can generate high levels of burnout, health problems and low productivity. This dynamic becomes even more complex in environments such as gyms and sports clubs, in which different relationships can occur between employees (in our study coaches and exercise teachers), directors and students, which refers to the need to study how this environment is constructed and organized. (Purpose) To verify the effect of the professional environment on coach's motivation and exercise teachers from a Self-Determination Theory (SDT)

KEYWORDS

Motivation; Workplace; Coaches; Exercise teachers; Gyms

perspective, was the objective of this research. (Methods) Data were collected in a non-probabilistic sample from 12 individuals (6 males and 6 females, $\bar{x} = 34.1$ years old; $S = 7,7$ years), average working time of 4.5 years ($S = 3.4$ years), during a week in January 2020 at a sports social club in São José do Rio Pardo, São Paulo, Brazil. As instrument, it was used a depth semi-structured interview built on through the Self-determination Theory perspective. To analyze the data, NVivo Release 1.0 software was used, through the assumptions of content analysis. (Results) The coaches and exercise teachers pointed out intrinsic reasons for the professional practice, and that the created environment contributes to the motivation at work and to the general well-being. External rewards were indicated as a professional consequence, which seems to be mediated mainly by pleasure, personal growth, and contributions to the community. However, social recognition and material rewards, were also mentioned as reasons for professional practice. Some interviewers reported sensed occasionally controlled by their students and parents, when they questioned their professional competence. On the other hand, when their students / athletes gave positive feedback about their results, there is an increase in motivation and greater perception of competence by these professionals. Superior's feedbacks and co-workers, also moderately help to increase this motivation. These individuals indicated having a more autonomous orientation profile and having their basic psychological needs (BPN) in the professional environment met. BPN are fostered by superiors, co-workers and students / athletes, what contributes in some degree to the same professionals, fostering them with their students / athletes. (Conclusion) The results support the theoretical assumptions of SDT, especially in relation to the motivational climate, created in the professional environment by attending BPN.

Supporting educators' pedagogical activities with 360° video

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ABSTRACT

As the COVID -19 pandemic has spread around the world, concepts such as social distancing are being put into practice in education. This has created many new opportunities for education, but also many challenges. Although the trend for online education was growing previously, the COVID-19 pandemic has accelerated this trend and with it the transformation of education from traditional to digital. Policy makers in the education sector have been forced to adopt social distancing measures and in practice this has resulted in more teleconference and distance learning, replacing face to face learning in traditional classrooms. Educators have been asked to use new technologies to transfer their traditional teaching practices to virtual ones and develop appropriate pedagogical approaches. This is the opportunity that education

KEYWORDS

digital technologies; online education; physical education; sport sciences

has taken to move forward. The challenge that education faces is to make online learning user-friendly to teachers and students and pedagogically appropriate. To do this it is necessary to embed digital technologies, such as 360° videos, in ways that support deep and meaningful learning and build multifunctional online environments rather than relying on simple teleconferencing. In the present study the perceptions of academic lecturers about how to structure an online course educating about 360° videos use were recorded. The sample consisted of 17 university lecturers from Austria, Greece, Italy, Netherlands and UK involved in the development of 360° videos as a means of multifunctional online environments. Participants completed a survey including questions about the content and delivery mode of a teaching course, and open ended questions with their preferences about such a course. With respect to the content of the course participants suggested including information on the design and pedagogical content of the 360° videos, evidence and examples of how to use them in practice and practical knowledge of the technology required to make a 360° video. With respect to the delivery of the course, participants favored a combination of work at their own pace with some guidance from tutors. Furthermore, participants suggested that the course should be around 6 sessions, lasting 45 and 60 minutes each. The findings of the present study provided useful information about the content and delivery mode of a course educating about the use of 360° videos. Taking into consideration the digital transformation of higher education, as a result of COVID-19, such courses are expected to enhance educators' pedagogical activities.

Auditive hints influence decision making in team sport

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ABSTRACT

Tactical decision making in sport is one of the fundamental parts of team sport performance and other domains. The aim of this study was to investigate the perceptual and cognitive mechanisms that underlie the processing of visual and auditory information in the course of decision-making situations in sport. Specifically, we investigated the influence of additional auditory information on decision making in offensive tactical situations in indoor handball. In team sport games the ability to find an optimal tactical solution is incremental to perform successful. Besides the visual anticipation, other factors also contribute to successful individual and team performance in fast and dynamic sport situations. Next to a variety of contextual information that are game inherent, verbal communication is used to exchange tactical plans or to give short tactical instructions in decision making processes. Therefore, participants were required to judge visual presented handball situations on a coach board. Conditions were manipulated regarding additional auditory information, in the

KEYWORDS

tactic representation; handball; audiovisual stimulation; decision making; augmented information

way as (a) mismatching, (b) matching, or (c) no auditory information was given. Response accuracy and response times were measured. Participants were instructed to ignore the auditory information and only make decisions based on the visual stimuli given. Results show faster reaction times for correct decisions when auditory and visual information were matching, but also faster reaction times for incorrect decisions in mismatching auditory-visual stimuli. Furthermore, in mismatching auditory-visual conditions error rates were greater and correct decisions were slower than correct decision in trials with no auditory information. These results indicate that auditory information play a critical role for tactical decision making, that is, they can accelerate the decision-making processes, but wrong information yield in cognitive crosstalk of perceptual input, and thus leads to higher error rates and higher cognitive costs to (re-)decide correct. The present results provide evidence that, for processing of tactical situation in sport, decision-making is related to the interaction of visual and auditory information. Thus, coaches should be aware of their influence when they comment and advice game situations. For example, a slightly reduced decision-making speed in fast team sports can have a detrimental effect, if game situations change or opponents even pick up this information.

Give me Five-5 Slides in 5 Minutes Free Communication Presentation

Using the Ottawa Mental Skills Assessment Tool-3 (OMSAT-3) as a periodization tool for psychological training in youth athletes

João Aversa, Amanda Dorvalina de Almeida, Cristiane Santos Moreira, Cláudio Olívio Vilela Lima and Franco Noce

Minas Tênis Clube

ABSTRACT

Introduction: The OMSAT-3 is a tool developed to measure 12 mental skills scales grouped in three broader conceptual components (foundation, psychosomatic and cognitive skills). The test consists of 48 sentences to which the subjects agree or disagree in a scale of 1 (strongly disagree) to 7 (strongly agree). At the end, the subjects point out which are the four most important mental skills for them out of the 12 presented by the tool. **Purpose:** The purpose of this work is to show how the results obtained through the OMSAT-3 are used to prepare a periodized psychological training with the athletes of Minas Tênis Clube (MTC), a Brazilian high performance sports club. **Methods:** The first part was to call the athletes of the club to answer the test. There were 652 athletes of 8 different sports tested (Swimming = 256; Volleyball = 116; Basketball = 83; Futsal = 75; Judo = 62; Tennis = 34; Artistic Gymnastics = 15; Trampoline Gymnastics = 11). There were 428 male and 224 female athletes. The age varied from 9 to 20 years-old. After the tests were

KEYWORDS

Sport Psychology; Mental Skills; Periodization

corrected, the results are being used alongside the demands of the coaches for their respective teams, as well as the empirical observation of the psychologists in competitions and training sessions and the team's calendar of events to prepare a periodized program of psychological training based on the model proposed by Blumestein and Orbach. Results: The results of the OMSAT-3 show that in general, the youth athletes of MTC had a high score in goal setting, self-confidence and commitment, and a low score in relaxation and focusing. When comparing the results between genders (male, female) and sports (single, team) we see that women in single sports had a higher score in goal setting ($M = 5.8$, $SD = .061$, $p = .001$), relaxation ($M = 3.3$, $SD = .081$, $p = .001$) and competition planning ($M = 3.7$, $SD = .098$, $p = .001$); men in single sports in activation ($M = 4.9$, $SD = .069$, $p = .001$); Women in team sports in commitment ($M = 5.6$, $SD = .141$, $p = .001$) and imagination ($M = 4.9$, $SD = .135$, $p = .001$); men in team sports in commitment ($M = 5.7$, $SD = .093$, $p = .001$). Conclusion: The OMSAT-3 has presented itself as a useful tool to develop a psychological profile of the teams and athletes. On the other hand, it should not be used as the only source of information regarding the mental skills of athletes. The demands of coaches and athletes, the empirical observation of the psychologists in training sessions and competitions and the team's calendar of events are also to be taken into account when preparing a periodized psychological training.

Coaches' encouragement of athletes use of mental skills in competition

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ABSTRACT

Coaches play a significant role in athletes' physical and mental preparation for performance. Athletes commonly use mental skills to enhance their performance, particularly in competition, but it is unclear to what extent coaches influence athletes' employment of these skills. Underpinned by the revised Coaching Efficacy Model, the main purpose of this study was to investigate coaches' encouragement of mental skills within a competition context using an adapted version of the Test of Performance Strategies-2 (TOPS-2). Additional aims were to determine whether the specific mental skills encouraged by coaches differed according to athletes' gender, competitive level, and sport type, and to explore relationships between coach behaviour and athletes' confidence in their mental and physical preparation and satisfaction with their coach. Student-athletes ($N = 413$; M age = 21.59, $SD = 2.55$; males = 224, females = 187) completed the modified TOPS-2, the mental and physical subscales of the Sources of Self-Confidence Questionnaire (SSCQ) and the Coaching Satisfaction Questionnaire. A repeated measures ANOVA revealed the most frequently encouraged mental skills in

KEYWORDS

coaches' encouragement;
mental skills; competition

a competition to be emotional control and goalsetting, whereas relaxation was least frequent. MANOVAs showed no gender differences, whereas athletes of higher competitive levels and individual sport athletes, respectively, reported more encouragement from their coaches to use mental skills than lower competitive level athletes and team-sport athletes. Finally, hierarchical multiple regressions revealed the mental skills of activation, emotional control, and positive thinking as significant positive predictors of coaching satisfaction. Mental skills of activation, attention, automaticity, emotional control, relaxation, self-talk, and positive thinking were the main predictors of physical and mental confidence during competition. This study is the first to investigate coaches' encouragement of mental skills in competition within the framework of the revised coaching efficacy model. Future research could expand on this study by examining similar questions in a different context (e.g., practice), or by assessing coach support for use of mental skills from the perspective of coaches.

The effect of mindfulness training on professional golfers' basic psychological needs fulfillment and well-being: a neuroimaging study

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ABSTRACT

Athletes who have long-term high competitive stress situations, have high-level psychological functions and the best sports performance are valued by sports psychologists. Mindfulness is thought to increase well-being. According to SDT, awareness in the concept of mindfulness is regarded as an essential element for individuals to actively explore the internal and external world to satisfy psychological needs. Whether the issues related to the satisfaction of psychological needs or well-being, the exploration of relevant neural representations of the brain is just in its starting, and testing the neural responses of the psychological needs fulfillment and well-being is still an emerging research field in neuroscience. In competitive sports situations, only correlation studies indicated that mindfulness could affect athletes' well-being by psychological needs fulfillment, future research is needed to establish the causality of this model. This study used a single-subject design combined with A-B-A and cross-participant multi-baseline design, added with neuroscience image measurement methods to examine the effects of mindfulness on professional golfers' psychological needs fulfillment and well-being brain area. The participants in this study were four professional golfers, and completed the entire protocol including: baseline, intervention, follow-up. Participants were asked to complete questionnaires twice a week which include mindfulness states, psychological needs fulfillment,

KEYWORDS

neuroscience imaging;
functional connectivity;
mindfulness; well-being;
professional golf

psychological well-being, and subjective well-being, and attended an fMRI protocols both before the start of training and after training finished. All participants gave informed consent and were paid for participation. This study used visual analysis, C statistics, multi-voxel pattern analysis, and group analyses for the data analyses. The longitudinal results showed that the intervention of mindfulness training effectively enhanced psychological needs fulfillment and well-being. After the intervention, the functional connectivity of the right anterior insular cortex with the right caudate and the left thalamus were significantly decreased. After the intervention, the functional connectivity of the right anterior insular cortex with the right caudate, and the left thalamus were significantly decreased; the functional connectivity of the right insula with the left superior frontal gyrus, the right dorsolateral frontal gyrus, and the right medial cingulate gyrus were significantly increased. Results suggest that 8 weeks of mindfulness training could effectively enhance professional golfers' psychological needs fulfillment and well-being, and found objective neurological evidence. In the future, mindfulness training should be promoted to improve athletes' knowledge of mindfulness, thereby enhancing their psychological needs fulfillment and well-being.

Exploring styles of play in football and team cultural diversity across 21 professional leagues worldwide: an ecological dynamics perspective

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ABSTRACT

Cross-border movements of professional football players have significantly intensified over the past two decades posing a number of challenges for practitioners engaged in talent recruitment and training. One challenge is selecting and developing players to meet the demands of particular leagues and the needs of specific teams. Another is ensuring the smooth transition of migrant players to a new (sub)culture that involves adaptation to different training practices, playing styles and game tactics. As football is taught and played differently across the globe, understanding how cultural diversity impacts styles of play within multicultural teams is critical for performance enhancement. Despite the significance of cultural heterogeneity in elite football, the effect of team cultural composition on styles of play has not been investigated to date. To address this gap in the literature, this exploratory study was designed to achieve three aims: (1) identify and describe distinct playing styles in professional (association) football across the globe; (2) analyze differences in the utilization of playing styles and provide inter-league comparisons; and (3) explore the effect of team cultural diversity/heterogeneity on playing styles. A constraints-led

KEYWORDS

ecological dynamics; styles of play; football; cultural diversity; multicultural teams

approach framed within ecological dynamics was adopted as the integrative and guiding theoretical framework. A total sample of 12,379 matches played by 375 teams in 21 selected professional leagues in Europe, Asia, Oceania, North and South America during the 2018/19 football season was analyzed in relation to 23 performance indicators. The results of principal components analysis revealed four distinct playing styles: possession-based, constructive attacking, defense-oriented, and direct long-ball. Depending on the degree of reliance on particular styles, leagues were classified into four clusters. Results suggested that the cultural heterogeneity of teams had a weak effect on the utilization of playing styles, thus providing support for the deployment of more contextualized, constraints-oriented vs. static cognitive approaches to performance enhancement and talent recruitment. Moreover, it was found across all leagues that affluent teams tend to exhibit greater cultural heterogeneity and utilize playing styles more homogeneously. The findings underscore the cultural embeddedness of football, highlighting the importance for practitioners of gaining enhanced understandings of the demands of particular leagues to facilitate effective recruitment and training strategies.

The influence of the IBQ® program on the personality dynamics in elite athletes: a phenomenological approach

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ABSTRACT

The training of elite athletes involves bringing a complementary added value each Olympic cycle. Complementary training for specific training, whether physical, technical, tactical or psychological, aims placing high-level athletes in environments that activate the functional-operational mechanisms to cope, to exceed the limits for which they are programmed from an ontogenetic and a physiological point of view. The IBQ® Program (The Integrated Body Intelligence Quantakinetic Fitness) is essentially a program for developing coordination skills, with all the related components with effects in the applied psycho-neural-motor plan, by accessing the preconscious areas and the subconscious bodily intelligence, constituting itself as a complementary training program that does not replace any of the components of sports training. The purpose of the qualitative phenomenological study is to identify patterns in the dynamics of the personality of elite-athletes in relationship with the IBQ Program. For five full days (at least 9 hours/day) in each of the three modules of the program, 7 elite-athletes (3 fencers, 1 shooter, 1 wrestler, 1 archery and 1 gymnast) worked on ambidexterity and coordination: first module working more with the non-dominant hand; second, equally with both hands; and - third coordination and balance with complex stimuli. In order to

KEYWORDS

body intelligence;
personality dynamics; elite-athletes; coordination;
complementary training

measure the effects of the IBQ program we used the CPI 260® (Californian Personality Inventory) 7 times – pre-testing, and every time before and after IBQ module. The results are interesting considering the fact that no matter the personality type of the athlete before the IBQ Program, they all became Alpha during the program or at the end of the third module. All the athletes involved registered an increase in self-acceptance, intuition, dominance, achievement through conformity and intellectual efficiency. The return of the elite athlete to reflex, to instinct, to the archaic elements in relation to the operational subconscious generates a revitalization of the individual psychological characteristics. The activation of the subconscious body intelligence determines a reconfiguration of the relations in and with the environment and its domination according to the rules clearly defined by it.

Unpacking thematic analysis: an ontological, epistemological, and methodological look at coding reliability, reflexive, and codebook analysis.

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ABSTRACT

Cited over 100,000 times, Braun and Clarke's (2006) article, Thematic analysis in psychology, has popularized thematic analysis within sport and exercise psychology research (Braun & Clarke, 2019). Thematic analysis is described as an analytic method where qualitative data are segmented, categorized, summarized, and reconstructed to capture important concepts (themes) within a data set (Givens, 2008) and can be broadly categorized into three distinct thematic schools (i.e., coding reliability, reflexive, and codebook), each with their own philosophical orientation (Braun & Clarke, 2019). These philosophical orientations range from realist paradigms such as positivism (coding reliability) to relativist paradigms such as constructivism/constructionism (reflexive), with codebook thematic analysis falling somewhere in between (Braun & Clarke, 2019). Despite the well-defined boundaries of each thematic approach, confusion remains surrounding these thematic schools, with some scholars unintentionally treating thematic analysis as a single approach. Resultantly, researchers incorrectly amalgamate the distinct data analysis methods into one approach or utilize a thematic method that is philosophically misaligned (Braun & Clarke, 2019). These misalignments create disconnects between ontology, epistemology, methodology, and methods, resulting in untrustworthy results and muddled thematic analysis literature for future researchers, perpetuating a cycle of misunderstanding and misuse of thematic analysis (Braun et al., 2018). This presentation will be used to ontologically, epistemologically, and

KEYWORDS

Thematic analysis; Methodology; Coding reliability; Reflexive thematic analysis; Codebook analysis

methodologically unpack coding reliability, reflexive, and codebook thematic analysis to aid sport and exercise psychology researchers in developing deeper understandings of the advantages that each thematic school offers and how each approach aligns with a philosophical position. First, coding reliability will be unpacked to demonstrate how it allows research teams to quickly analyze data together and create generalizable results applicable to large populations of people (e.g., policy development). Reflexive thematic analysis will then be discussed as a way to facilitate in-depth, interpretive analyses that can be used to create rich and contextual understandings of sport participants' experiences within their sport domains (Braun et al., 2016). Finally, codebook thematic analysis will be introduced as a method that shares the structured approach with coding reliability with the broad qualitative philosophy of reflexive thematic analysis. Developing theoretical and practical understandings of what each approach offers to sport and exercise psychology researcher can help create rigorous and well-crafted research projects, as well as contribute to clear data-analysis methods for future sport and exercise psychology researchers.

Effective on-site coaching behaviors during competitions

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ABSTRACT

Effective coaching behaviors has been one of the major issues in sport psychology and empirical research has shown that coaching behaviors affect athletes' performance, behavior, and psychological responses. However, as most of the studies described coaching behaviors in general training and instructive situations, situation-specific coaching behaviors, especially those during competitions, were not systematically studied. According to Becker (2012), appropriateness (i.e., exhibit the right behaviors at the right time) is one of the key components of effective coaching behaviors. It is crucial to investigate what, when and how coaches should do during competitions. Therefore, the aim of the present study was to identify what coaches can do, should do, and should avoid doing during competitions from both coaches' and athletes' perspectives. Four coaches from basketball ($n = 2$), baseball, and shooting, and four athletes from basketball and shooting ($n = 2$ each) were interviewed. Interview data were analyzed following the protocols of content analysis method. Results revealed several themes, including: (1) emotion-related behaviors (e.g., coaches should manage their own emotions on-site and avoid showing a long face), (2) game knowledge and skill-related behaviors (e.g., coaches should explain game plans clearly to athletes before the game and response contingently during the game), (3) positive feedbacks (e.g., coaches should show their confidence in athletes through both verbal and nonverbal languages), (4) supportive behaviors (e.g., coaches

KEYWORDS

coaching; coach behavior; on-site

should have athlete's back when athletes were not treated fairly in the game), (5) regulating athlete's mental state (e.g., coach should understand their athletes well and help athletes to regulate their emotions if needed), (6) instructive behaviors (e.g., during a break or time-up, coaches should instruct, not scold), (7) goal-setting (e.g., coaches should set clear goals for each athlete in each game), (8) opportunities (e.g., coaches should always give athletes chances to correct mistakes by themselves), (9) consistency (e.g., coaches should apply the same logic in regulating line-ups and substitutions). (10) threatening and backbiting (e.g., coaches should avoid threatening athletes and criticizing athletes behind athlete's back). The results of this study provided a preliminary description of effective on-site coaching behaviors during competitions. More research is needed to gain more knowledge regarding on-site coaching behaviors across sports with various characteristics (e.g., individual vs. team sports).

The relationship between self-compassion and injuries, and fear of injury in soccer

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ABSTRACT

Injuries are part of an athlete's life, are highly unpleasant and can be a major impediment to an athletic career. Therefore, it is important to reduce the risk of an injury. Although some factors affecting the risk for injuries are uncontrollable (e.g., opponents), others are subject of change (e.g., personality factors like fear of injury) (see stress-injury model by Williams, & Andersen, 1998). A rather new personality component in sport science is self-compassion. Self-compassion consisting of self-kindness, common humanity, and mindfulness (Neff, 2003) might be an important resource for athletes. Whereas its positive effect on well-being is well documented (e.g. Ferguson et al., 2014), only few studies examined the effect of self-compassion on injuries. In a cross sectional study we examined the relationship between self-compassion and the number of injuries, injury-related absences, fear of and rumination (i.e. brooding) on injuries. Based on the stress-injury model we expected that athletes high on self-compassion will report less injuries and less injury-related absences, through its buffering effect on stressors (Röthlin, et al., under review). Accordingly, we expected that self-compassion is related with less rumination and fear of injury. Eighty-six soccer players ($M_{age} = 24.52$, $SD = 4.34$) playing at the semi-professional level in Switzerland took part on the online questionnaire study. The retrospective part covered the last two years examining frequency of injury as well as injury-related training absences. The second part consisted of questionnaires measuring brooding based on injuries (adaptation of the Response Style

KEYWORDS

self-compassion; injury; soccer

Questionnaire, Huffziger & Kühner, 2012), physical (e.g., losing athletic ability) and social (e.g., be perceived as weak) fear in relation to injuries (Rex, & Metzler, 2016), and self-compassion (Raes, et al, 2011). Results showed that the occurrence of an injury (53 of 86 reported an injury in the last two years) was not related to self-compassion, $t(84) < 1$, nor was the number of middle and strong injuries, or the duration of injury-related training absences, $|r|s < .05$, $ps > .05$. However, self-compassion was associated with less brooding as a reaction to an injury and less fear for potential social consequences of injuries, $|r|s > .21$, $ps < .05$. In contrast, fears of physical consequences were unrelated to self-compassion, $|r|s < .13$, $ps > .05$. Our study showed that self-compassion might be an important resource when handling injuries and might reduce social fears, but not physical fears related to injuries.

Athletic identity, career adaptability, social support and career readiness in college student-athletes: a three-wave cross-lagged study

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ABSTRACT

College student-athletes face a crucial stage of career transition where most of them often struggle to balance athletic and academic roles during the college experience. Previous evidence has suggested that student-athletes often associate more with their athletic- than academic-entered roles, which might negatively influence campus integration and career exploration. Given the particular demands of intercollegiate sport and the lack of career readiness may contribute to student-athletes' career development deficiencies, the long-term development of career readiness in college student-athletes remains noticeable. Purpose: Framed from a constructivist approach, this study drew from Savickas' (2005) Theory of Career Construction to examine the reciprocal relationship between athletic identity, career adaptability, social support and career readiness over time in college student-athletes. Methods: Two hundred and twenty-five college student-athletes (158 males, 67 females, age = 21 years) had completed a three-wave investigation within a year. The structural equation modeling (SEM) was applied to test the three-wave cross-lagged models. Results: The results supported the career constructivist model revealing positive synchronous correlations between athletic identity, career adaptability, social support, and career readiness at each time point. Also, reciprocally significant relationships were found among athletic identity, career adaptability, social support, and career readiness over time. Finally, the largest cross-lagged effects were found

KEYWORDS

career development; sport retirement; career transition; self-identity

between career adaptability and career readiness. Conclusion: These findings contribute to clarify the longitudinal development of career readiness in college student-athletes and influential variables involving in this process. Importantly, the development of career adaptability can be important for successful career preparation. The authorities can gain information on how to develop appropriate policies or strategies for college athletes to deal with their career transition out of sport and student-athletes can benefit from career education programs for improving their career adaptability.

Effects of mindfulness training on performance-related EEG markers and putting performance in skilled golfers

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ABSTRACT

The Mindfulness-Acceptance-Commitment (MAC) approach is an acceptance-based mindfulness training that has been used as a mental skill training method for improving sports performance in athletes. MAC is postulated to improve the awareness of inner and outer environments and enhance the fluency of movements. Despite some studies providing support for the effectiveness of mindfulness intervention on improving athletic performance, more empirical studies are needed to understand the robustness of this mental skill training method. Moreover, the underlying mechanisms explaining the effect of mindfulness training on sport performance is understudied. Several Electroencephalography (EEG) markers, such as left temporal alpha (T3 α), sensory motor rhythm (SMR), and frontal midline theta (Fm θ), have been implicated as cortical processes associated with sports performance. Given the close links that these EEG markers have to attention, examining the effect of mindfulness training on these markers could provide some insight into the cortical mechanisms underlying the effect. As such, this study aimed to examine the effects of 8 hours of mindfulness training sessions on golf putting performance and the aforementioned EEG markers (i.e., T3 alpha, SMR, and Fm theta) in skilled golfers, over a period of 7 weeks. Twelve skilled golfers were assigned to either an experimental (N = 7, mean age = 41.75 years, mean handicap = 12) group or a passive control group (N = 5, mean age = 28.8 years, mean handicap = 6). Participants performed 60 putts while EEG were recorded before and after the mindfulness intervention, which lasted for about one month. Given the small sample size, several nonparametric tests with group as the independent variable, and each of the different scores between pre- and post- putting performance tests and 3 EEG markers as dependent variables were performed. The results showed that neither putting performance, measured

KEYWORDS

Attention; EEG; Golf; Mental training; Neurofeedback

by both the percentage of holed putts and the average distance from the hole of the unholed putts, nor the three EEG markers showed any difference between the experimental and the control group. Such findings may be due to the fact that the participants were not randomly assigned, resulting in differences in age and skill levels between the two groups. Further, whether participants can correctly apply mindfulness to putting tasks also merits additional examination.

The role of resilience on stress and recovery of elite athletes in Nigeria

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ABSTRACT

Resilience is an important psychological factor in sport that contributes greatly and influence the ability to overcome and adapt positively to difficult and challenging situations. Elite athletes face a lot of pressure, stressor and adversity from sport and non-sport milieu which often affect not only the physical wellbeing and sport performance, but also the psychological wellbeing. Ability of the elite athletes to cope, overcome and adapt to various sources of pressure, stressor and adversity in a highly demanding and competitive environment, and also recover quickly will make them to attain optimal health, peak performance and achieve success. The purpose of this study was to analyse the role of resilience on stress-recovery of elite athletes in Nigeria. Participants were 187 subjects (M = 149, F = 38; age ranged 18years and above) who were selected from various sports using purposive sampling technique to select elite athletes who represented and participated in 2021 National Sports Festival in Nigeria. Connor-Davidson Resilience Scale-10 (CD-RISC-10) and Stress-Recovery Questionnaire for Athletes (RESTQ-52 Sport) instruments were used for data collection. Shapiro-Wilk Test, Pearson Product Moment Correlation and Structural Equation Modelling (SEM) were employed for data analysis. Results of the study revealed that resilience negatively correlated with the factors of stress; conflict ($r = -0.225$), burnout ($r = -0.205$), lack of energy ($r = -0.238$), but positively correlated with physical compliant ($r = 0.146^*$). On the other hand, resilience positively correlated with the factors of recovery; general wellbeing ($r = 0.372^{**}$), sleep quality ($r = 0.343^{**}$), physical recovery ($r = 0.372^{**}$), be in shape ($r = 0.240^{**}$), social recovery ($r = 0.313^{**}$), success ($r = 0.444^{**}$), personal accomplishment ($r = 0.457^{**}$), self-efficacy ($r = 0.426^{**}$) and self-regulation ($r = 0.322^{**}$). Results of the structural equation models showed that resilience had significant direct effect on stress and recovery with variability of 26% and 55% respectively. Resilience negatively predicted stress and positively

KEYWORDS

Resilience; Stress; Recovery; adversity; positive adaptation

predicted recovery. The resilience and stress-recovery model is invariant to gender and sport-type of the participants. It was concluded that resilience plays an immense and significant role in coping, overcoming and positively adapting to situations of stress and recovery of elite athletes.

The influences of coaches' emotion expression on sports team atmosphere and athletes' emotion

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ABSTRACT

In the past, research on emotion in the field of sports has confirmed the influence of emotion on sports performance. However, the importance of coaches' emotional expression on teams or athletes was ignored. In recent years, scholars have begun to explore the topic of emotions from the perspective of alexithymia and emphasized the importance of emotion regulation intervention. Moreover, psychologists have begun to acknowledge the social and interpersonal aspects of emotional processes. In a sports setting, coaches play an important role in different levels of competitive sports. They provide effective training and guidance in the players' skills, tactics, and physical fitness, in addition, coaches are an important source of the players' mental stability and confidence. Based on this, the purpose of the present study was to explore the influences of coaches' emotional expression on sports team atmosphere and athletes' emotion. This study took a college Division-I male volleyball team from southern Taiwan as a research object and eighteen players participated in the study. Experience sampling method (ESM) was used to collect data, in which participants are asked to complete a self-reported questionnaire on their feelings and thoughts twice per day, immediately after they've experienced them. The questionnaire consisted of four scales, namely, perceived coaches' alexithymia, perceived fairness of coach, team atmosphere, and positive/negative emotions. Data were collected daily across 6 consecutive games in an inter-collegiate competition hold by University Volleyball League. The results indicated that the higher athletes' perception of the alexithymia of the coach, the lower athletes' perception of the fairness of the coach, the worse the team atmosphere, and the fewer the positive emotions reported by the players. On the other hand, when the athletes perceived the fairness of the coach, the team atmosphere was better, and more positive emotions were identified. Moreover, this study found that team atmosphere played a mediating role between perceived coach emotion expression and athletes' positive emotion. The results of this study can be used as a reference for coaches and managers

KEYWORDS

Alexithymia of coaches;
fairness of coaches;
experience sampling method

of sports teams. Participants in different age groups and of varying skill levels should be included in the future to facilitate a more general understanding of coaches' and athletes' emotional expression and the possible interaction effects on emotions and behaviors.

A systematic review of cerebral cortical activity in sports performance using virtual reality training

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ABSTRACT

Virtual reality (VR) technology is increasingly popular and has been applied in several domains, including sport science. Many athletes, coaches, and athletic trainers use virtual situational training to improve sport performance. However, the efficacy of various VR training programs are inconsistent and the neural mechanisms of VR training in athletes are not well understood. This study conducted a systematic review of all published research that reported the impact of VR scenarios on electroencephalogram (EEG) indicators and sports performance, in order to better clarify the association between brain cortical activity and sport performance in athletes with VR training. A systematic literature search of the Scopus and PubMed databases using the keywords "Virtual or VR", "EEG or Electroencephalogram", and "sport or exercises or physical training or perform or athlete or kinesiology" was finalized on April 30, 2021. A total of 610 articles were generated in the initial search, which contained 347 articles in Scopus and 263 articles in PubMed. After removing duplicate research and unpublished papers, 419 articles were excluded, and only 5 articles remained in the final review after the full-text screening. We recorded the research purpose, participant characteristics, research design, VR technology, exercise type, measures, EEG records, and the main findings from these 5 studies. The results showed that 3 of the 5 studies used indirect measurement of sports performance or motor skill, while the remaining 2 studies directly measured sport performance. Among the 5 articles, one demonstrated a significantly better sport performance in the VR situation, and 2 studies showed that sport performance in the real situation was significantly better than in the VR situation. The other 2 studies found no significant difference in sport performance. This review offered a better understanding of VR's impact on mental, physical, and sports performance. However, the number of studies included in this review was too small to sufficiently confirm the efficacy of VR training in athletes. More VR training in sport related research is needed, particularly regarding the neural mechanisms of sport performance during VR training.

KEYWORDS

Virtual; EEG; sport

Validation of the german version of the moral disengagement in doping scale

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ABSTRACT

The phenomenon that athletes engage in doping behavior despite this behavior violating their own moral standards can be, partly, explained through moral disengagement. As described by Bandura (1991) the construct refers to cognitive mechanisms individuals use to diminish negative emotions, such as guilt or regret, when being involved in transgressive actions. For example, athletes may justify their own doping behavior by arguing that everyone on the team is doing it (i.e., diffusion of responsibility). As numerous studies have demonstrated, moral disengagement is strongly associated with doping intention, likelihood and susceptibility (e.g., Ntoumanis et al., 2017; Kavussanu et al., 2020). For measuring doping specific moral disengagement within the sport context Kavussanu and colleagues (2016) developed the Moral Disengagement in Doping Scale (MDDS). The instrument contains six items along one factor, with each item representing one moral disengagement mechanism. The purpose of the present study was to create a German version of the MDDS (the MDDS-D) and to examine its psychometric properties. To this aim the scale was translated following a collaborative approach (Harkness, 2003) and then validated in an overall sample of $N = 676$ athletes whereof $n = 366$ were young elite athletes. Participants answered a survey (either online or paper pencil) consisting of the MDDS-D as well as measures assessing doping intentions, doping susceptibility, anticipated guilt and antisocial behavior. Confirmatory factor analyses with robust estimators for nonparametric data indicate the one-dimensional structure as postulated in the original English version ($CFI = .992$, $RMSEA = .029$, $SRMR = .023$). The scale exhibits acceptable internal consistency ($\alpha = .69$), good split-half reliability ($corr\ r_{tt} = .80$) and acceptable retest reliability ($r_{tt} = .65$). Furthermore, the MDDS-D correlates significantly positive with doping intentions ($r_{sp} = .41$) as well as doping susceptibility ($r_{sp} = .36$) and significantly negative with anticipated guilt ($r_{sp} = -.43$). These findings are in line with the literature (Kavussanu et al., 2015; 2020) and therefore provide evidence for the scale's concurrent validity. However, the assumed relation between doping moral disengagement and antisocial sports behavior (Kavussanu et al., 2016) could not be demonstrated in the present sample. Hence, future research on doping moral disengagement correlates is necessary to underpin the scale's construct validity. Nevertheless, these results suggest that the MDDS-D is a suitable instrument to measure doping moral disengagement in the German language area which may be especially beneficial for the evaluation of doping prevention programs focusing on moral variables.

KEYWORDS

moral disengagement; doping; psychometric properties

Informing professional practice and research with qualitative research findings: a community-based participatory action research example

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ABSTRACT

The total percentage of qualitative research published in major sport and exercise psychology journals (i.e., JSEP, TSP, JASP, PSE, IJSEP, SEPP) increased by almost five percent between 2010-2012 and 2015 – 2017 (McGannon et al., 2021). Qualitative research offers researchers the opportunity to learn from athletes, coaches, and others involved in sport and exercise in their natural settings and interpret phenomena in terms of what they mean to people at an individual level (Denzin & Lincoln, 2011). However, the diverse ways in which qualitative research can be approached also presents difficulties for researchers and professionals alike to make sense of in relation to their own work. For instance, many researchers often cite the lack of statistical-probabilistic generalizability as a limitation of qualitative work (Smith, 2018). This presentation provides three contextualised examples from a community-based participatory action research (CBPAR; Schinke et al., 2013) project of how researchers and professionals can learn from and use published qualitative research to inform their work. The first example will show how the use of creative non-fiction, in the form of polyphonic (i.e., multi-voiced) vignettes, can engender a relational feeling between the reader and characters in the story helping readers connect their own situation/context to interpretations of the story (Middleton et al., 2021; Smith, 2018). The second example will show how the transparent depiction of the research process can offer insights into how culturally safe spaces that open space for inter-subjective understandings between cultural dissimilar individuals can be cultivated. Attention to the use of terminology used by those in positions of power in formal and informal communication and the notion of open dialogue as a component of safety will be discussed as examples of how sport and exercise psychology researchers and practitioners can actively develop culturally safe spaces (Morris & Van Raalte, 2016; Spaaij & Scholenkorf, 2014). The third example concludes the presentation and shows how attention to the epistemological (and ontological) underpinning of qualitative research can inform how authentic relationships can be developed with athletes. Conducted from a social constructionist epistemological position, the CBPAR project placed greater importance on viewing truth as the meaning each story held for the storyteller and community, rather than seeking an 'objective' truth. Embracing the knowledge and expertise of athletes with humility, courage, and openness offers the opportunity to expand the horizons of our knowledge and develop genuine trusting relationships in which athletes feel empowered to control their development.

KEYWORDS

Authentic Relationships;
Creative Non-Fiction;
Cultural Safety; Knowledge
Translation; Philosophical
Considerations

Professional football players from defensive playing positions are more attentive and less impulsive

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ABSTRACT

Attention is a directed state of perception and one of the main cognitive abilities required in football match-play. It is a variable that discriminates performance levels of professional players from amateurs, experienced from non-experienced, and is further associated with the success of young players. To the best of our knowledge, there is no robust evidence to support whether attention also discriminates players from different playing positions in professional football. The present study aimed to evaluate whether there are differences in attention between professional football players of different playing positions. Sixty-six elite male players were evaluated (24.94 years old \pm 4.85), who played in the first division of the Brazilian Championship (2018-2019 season). The players were grouped according to their playing positions: 7 goalkeepers, 8 defenders, 15 fullbacks, 8 defensive midfielders, 13 offensive midfielders, and 15 forwards. Attention was individually assessed by the Quotient™ ADHD System. Four indices of the attentional behavioral state profile provided by the test and based on the time spent (in minutes) during its execution were used: attentive, distracted, impulsive, and disengaged behavior. Data is presented in the median (Md) and interquartile range (IQR). The Kruskal-Wallis Test ($p < 0.05$) and Mann-Whitney Test was used for comparing groups. The significance level was set as $p < 0.01$. The results indicated that the fullbacks showed less time with attentive behavior (Md = 9.00 min, IQR = 8.00-11.00) than defenders (Md = 16.00 min, IQR = 13.25-17.75; $p = 0.001$), than defensive midfielders (Md = 14.00 min, IQR = 11.25-15.00; $p = 0.002$), than offensive midfielders (Md = 12.00 min, IQR = 10.00-13.00; $p = 0.007$), and forwards (Md = 13.00 min, IQR = 11.00-16.00; $p = 0.001$). Fullbacks showed more time with impulsive behavior (Md = 8.00 min, IQR = 7.00-10.00) than defenders (Md = 3.00 min, IQR = 0.25-5.50; $p = 0.001$) and defensive midfielders (Md = 4.00 min, IQR = 1.25-6.00; $p = 0.002$). Offensive midfielders also showed more time with impulsive behavior (Md = 8.00 min, IQR = 4.00-9.00) than defenders ($p = 0.004$) and defensive midfielders ($p = 0.009$). Professional players from defensive playing positions, such as defenders and defensive midfielders, were more attentive and less impulsive than playing positions that require more often both defensive and offensive actions, such as fullbacks and offensive midfielders. The present findings support that there are distinctions in the attentional profile of different playing positions, possibly influenced by their respective technical-tactical demands.

KEYWORDS

Attention; Impulsivity;
Soccer; Elite Players;
Technical-tactical Demands

The effects of neuroelectric power on psychophysiological states to enhance sports performance with Argentine canoe sprint athletes.

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ABSTRACT

Several different EEG markers have been shown to be related to sport performance (Ming-Yang Cheng & Tsung-Min Hung, 2020). Theta band activity in the frontal midline of the brain is associated with the top-down attentional process and behavior monitoring. On the other hand, the electrical activity of the fronto-parietal areas is associated with the default mode network, which is one of the resting state networks related to introspection, visualization of the future and theory of mind. The objectives of this work are to apply transcranial direct current stimulation (tDCS) to study the psychophysiological states of pre-training and their effects on sports performance in relation to the maximum speed reached by high-performance Argentine paddlers in canoe sprint. In addition, functional brain connectivity is explored in motor imagery tasks in order to understand the sport's visualization process. The experiment was carried out under natural setting (following a preventive protocol for the COVID-19 pandemic) to monitor the brain activity of athletes in the real world of training. The methods used are psychometric scales of mental states and personality traits, neuroimaging technology and sports training monitoring. The recording of electroencephalography (EEG) data was performed with the Starstim 8 (Neuroelectronics) wireless device, is a transcranial current stimulation (tCS) and an electroencephalogram monitoring device. In addition, a Polar M400 watch (with an elastic band of Polar H10 electrodes) with a built-in Global Positioning System (GPS) was used to provide an accurate measurement of the heart rate and the speeds reached by athletes. Maximum speed training was determined as follows: Rhythm 6 (R6) of a series of 5 repetitions of 12 seconds duration each, with 2 minutes of recovery. The main hypothesis of this work states that the application of the tDCS enhances the maximum speed performance reached by paddlers in their kayaks. A second hypothesis postulates that a moderate / high level in the pre-competitive state anxiety variable as well as in the mood variable is positively correlated with brain activity in fronto-parietal areas, the oscillatory activity of theta waves (4-8 Hz) and alpha (8-12 Hz), mu / sensorimotor rhythm (8-13 Hz) and beta (15-30 Hz) in correlation with the maximum speed reached. The ultimate goal of this study is to explore psychophysiological parameters that allow us to search in future research for universal neural and psychological marks to try to optimize and predict sports performance through biofeedback training (BTF) and neurofeedback training (NFT) in canoeing.

KEYWORDS

Canoeing; tDCS; EEG; Psychophysiology; Speed

Making sense of a professional athlete's experiences with mental ill-health and stigma: a case study

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ABSTRACT

As the global interest in athlete mental health (and mental ill-health) continues to increase, athletes have begun using media articles to discuss their own experiences of mental ill-health. Though sport psychology researchers have explored athletes' experiences of mental ill-health, few researchers have sought to understand the experiences of stigma that come along with mental ill-health in sport. As stigma can have various negative outcome for athletes (e.g., refusing to seek help, losing their position on the team, exacerbated mental ill-health), a better understanding of mental ill-health stigma can help inform practitioners how to approach mental ill-health with athletes to reduce stigma and subsequently improve athletes' mental health outcomes. Therefore, we conducted an instrumental case study on a media article written by Ben Meisner about his experiences with mental ill-health and stigma as a minor professional hockey league goalie. We implemented Braun and Clarke's (2006; 2019) reflexive thematic analysis within a critical realist perspective to make sense of Ben's socially constructed descriptions of mental ill-health and stigma. Through the iterative six-step process, we developed three themes that delve into (1) the unique contextual and environmental factors that influenced Ben's described experiences with mental ill-health, (2) the stigma around mental ill-health in hockey, and (3) the feelings of hope that came with seeking help alongside suggestions on how mental ill-health can be more effectively managed within sport contexts. Within the results, we illustrated context-specific factors influencing athlete mental ill-health, including unique stressors and stressors that have been previously established (e.g., athlete identity; McGraw et al., 2018). We also reinforced previous findings of stigma, discussing Ben's withdrawal from social contact and help-seeking avoidance (e.g., Gulliver et al., 2012). Finally, we discussed the positive effects Ben experienced after seeking help and how to improve outcomes for athletes experiencing mental ill-health. Overall, our case study provides insight into the lived experiences of an athlete who struggled with mental ill-health and stigma, helping to better understand these phenomena and the characteristics of sport that enable them. Moreover, Ben's article exemplifies how media articles can positively influence mental health outcomes (Elsley et al., 2020) rather than perpetuate stigma (Cassilo, 2020). Self-published athlete articles can improve mental ill-health perceptions (Elsley et al., 2020) and reduce stigma by providing mental health education and exposure to other athletes (Kern et al., 2017).

KEYWORDS

athlete mental health; stigma; case study; media

Burnout, coping, functional classification, and team performance in wheelchair basketball players

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ABSTRACT

The high-performance competition environment can have a negative effect on the physical well-being and psychological dimensions of athletes with a disability. Burnout is a psychological syndrome of reaction to chronic stress. One technique to prevent and control this syndrome is through coping, known as an effort to manage stress. Although the International Paralympic Committee's classification system is used to maintain fair competition among different disabilities, athletes with a disability report that the classification process may be unfair or incorrect on certain occasions. The aims of this study were: i) to verify which dimensions of burnout and coping strategies were the most perceived; ii) to analyze whether there was a difference in the perception of burnout or coping according to the tournament final position, and iii) to analyze whether the functional classification was related to the dimensions of burnout and coping strategies. Seventy-one wheelchair basketball athletes who were competing in the Brazilian 3rd Division Men's National Championship, with a mean age of 36.8 ± 9.3 years, completed burnout (Athlete Burnout Questionnaire) and coping (Athletic Coping Skills Inventory) measures during the competitive phase. Statistical analyses were performed using the statistical package Prism, version 7. The level of significance adopted was $p < .05$. In summary, the results showed: i) the reduced sense of sports accomplishment dimension was more perceived by athletes with a disability compared to physical and emotional exhaustion, ii) the coping strategy less used by athletes with a disability was freedom from worry; iii) there was no difference in the perception of burnout or coping between groups of the first four and last four teams in the competition's final classification, and iv) there was no relationship between the functional classification and the dimensions of burnout and coping strategies. We conclude that, although burnout and coping can interfere with certain performance measures, there was no greater perception of the dimensions of burnout or coping strategies between the groups of the first four and last four teams. Finally, it is possible to conclude that the functional classification is not a key factor for the perception of the burnout dimensions or coping strategies.

KEYWORDS

para athletes; stress; coping strategies; burnout; basketball

Perceptions of parental involvement: examination of life skills development and flourishing in youth sport

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ABSTRACT

Youth sport is the ideal setting for promoting positive youth development, which has linked to life skills development and psychological well-being (Learner, et al., 2005). Parental involvement in youth sport has been proposed to play a role in facilitating such positive psychosocial outcomes, such as flourishing through sport (Dorsch, et al., 2016; Fredricks & Eccles, 2005). Therefore, the purpose of this study was to explore how athletes' perceptions of parental involvement behaviours in youth sport may predict the development of life-skills and flourishing. Participants were 150 Scottish athletes (M age = 14.81; SD = 1.78) competing at club, regional and national levels in a range of individual and team sports. Participants completed a range of measures in three waves, four weeks apart: Perceptions of Parental involvement behaviours (Teques, et al., 2019), assessing Encouragement, Reinforcement, Instruction and Modelling (wave 1); Life Skills Scales for Sport (LSS; Cronin & Allen, 2017) assessed Teamwork, Goal Setting, Personal and Social Skills, Problem Solving, Emotional Skills, Leadership, Time Management and Communication (wave 2) and Flourishing Scale (Diner et al., 2017) as a measure wellbeing (wave 4). Four parallel mediation models (PROCESS macro for SPSS; Hayes, 2013), tested the mediating effects of life skills on the relationship between each parental involvement variable and flourishing. Three out of the four models showed a direct effect on life-skills. The negative direct effect of perceptions of parental reinforcement on flourishing was significant ($\beta = -.30$, $p = .04$) and of the proposed mediators only goal setting ($\beta = 0.53$, $p = 0.005$, 95%, CI = [0.06, .14] and problem solving ($\beta = 0.014$, $p = 0.018$, 95%, CI = [0.009, .02] displayed significant indirect effect. The second model showed a direct effect of perceived encouragement was significant ($\beta = .03$, $p = .009$) and only personal and social skills displayed a significant indirect effect ($\beta = 0.23$, $p = 0.0001$, 95%, CI = [.02, .13]). The third model, showed a significant direct effect of perceived parental instruction behaviour ($\beta = .02$, $p = .026$), only team work ($\beta = 0.2$, $p = 0.01$, 95%, CI = [-.002, .02]), and goal setting ($\beta = 0.4$, $p = 0.001$, 95%, CI = [-.04, -.12]) displayed a significant indirect effect. The findings suggest that perceptions of parent's encouragement and instructional behaviours was positively related to the development of personal and social, teamwork and goal setting skills, life skills through the sporting environment and promoted athletes overall flourishing.

KEYWORDS

Athletes' Perceptive;
Flourishing Life Skill
Development; Parental
Involvement; Youth Sport

Cultural (Re)presentations of athlete maltreatment narratives: tracing stories of abuses on the british, australian and brazilian gymnastics teams through media data

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ABSTRACT

Elite athlete maltreatment is a systemic issue (Mountjoy et al., 2016). Despite athlete protection policies and programs, recent public attention suggests that elite athletes are abuse survivors of victimization occurring within their sport environment (Kerr et al., 2019). From a holistic perspective, athlete talent development environments (ATDEs) are multi-layered and complex organizations of interconnected systems. Present understandings of athlete maltreatment focus narrowly on abuses within the sport environment itself. However, interactions across athletes' micro- (i.e., coaches, parents, teammates) and macro- (i.e., sport sub-culture, national culture) environments inculcate athletes with a prescribed 'script' – a set of behaviours that are understood by a particular group of athletes as synonymous with participation in their ascribed sport (McGannon et al., 2015). Media data, as it is understood as a source of socio-cultural meaning (Gonsalves, et al., 2017), provides a novel avenue to expand our understanding of athlete maltreatment from a cultural perspective. Responding to the recent global surge in media coverage of abuse in elite gymnastics, we engaged in three instrumental case studies from different cultural contexts to trace athlete maltreatment narratives through the media storylines: 1) the British Gymnastics Men's and Women's Artistic Teams, 2) the Australian Women's Gymnastics Team, and 3) the Brazilian Men's Gymnastics Team. We employed a reflexive thematic analysis (Braun & Clark, 2019) to interpret athlete maltreatment as culturally constructed and position the media as an active agent in the cycle of athlete victimization. Previous understandings of athlete maltreatment constructed from other data sources have arbitrarily terminated athlete abuse timelines when athletes' exit their sporting context. Comparatively, layering athletes broader national culture into our interpretation of athlete maltreatment augmented our understanding of athlete abuse mechanisms. Through our presentation we consider the media's role in circulating culturally appropriated victimology narratives consequently silencing victims who do not match with accepted national and sport cultural victim characteristics. Additionally, we consider the media as an abuse mechanism from outside athletes' sport domain that provides abusers a means to remain connected with their victims. Through our culturally constructed interpretation of athlete maltreatment we extend our knowledge of athlete victimization outside of athletes' sport environment and consider the media's role in hindering athlete survivors' ability to heal from abuse.

KEYWORDS

athlete maltreatment; media data; elite gymnastics; national culture; sport culture

What kind of impact had been caused by moving the scheduled olympic games date? - qualitative analysis of statements by potential olympians

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ABSTRACT

The pandemic situation of Covid-19 surprised and changed all of us. It was no different with the athletes. Participation in the Olympic Games is usually the most important event in a sporting career, and an Olympic nomination is a particularly important long-term goal for many athletes. All obstacles on the way to its implementation are probably a source of frustration, arousing strong negative emotions and requiring adaptation. It can therefore be considered that the athletes involved in the preparations for the Olympic Games experienced additional stress, resulting from the change of the date of the event and the ban on participation in organized training. The aim of the study was to analyze the statements of potential Polish Olympians regarding their concerns about the postponement of the Olympic Games. The study group consisted of 57 athletes – women (29) and men (28) between 18 and 39 years of age – players representing various sports disciplines who were preparing for the Tokyo Olympics. The research was conducted in the form of online-line survey (an open-ended question) in the period of April 7–28 during the first threat of COVID-19 pandemic, following the decision to move the Summer Olympics to the year 2021. It was time of the greatest national restrictions and with information about the postponement of the games received. The study used a qualitative response analysis method for in-depth characterization of future Olympians. At the very beginning of the pandemic, the Olympians approached the governing decisions on the restrictions with great understanding. However, they manifested anxiety and apprehension about their career. They were afraid of future qualification and financial situation. The benefit they saw from this difficult situation was more time for training. But there were also disastrous statements like 'I was left with nothing'. Summarizing, most of surveyed Olympians said that the postponement of the Olympic Games had caused their dissatisfaction. They were concerned about threat to their own and their relatives' health, bad economic situation and uncertainty of the future. Despite negative emotions, they were able to continue training, even if they could not leave the house or use specialized equipment. Continuing the training despite unfavorable circumstances proves the strong inner controllability and high internal motivation of the studied group.

KEYWORDS

Well-being; health; pandemic; athletes; Tokyo 2020

Microcycle of sports psychodiagnosis and mental training in high performance athletes from Ecuador during the Covid-19 health crisis

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ABSTRACT

Introduction: this research constitutes a clinical-sports psychological intervention study during the Covid-19 health crisis in Ecuadorian competitive athletes, belonging to the High Performance Group and the "Young Promises" Project, the participants were selected by the Ecuadorian Olympic Committee (COE), through its Methodological Technical Department. The sample was made up of three female athletes; two shooting, aged between 30 and classified for the Tokyo 2020 Olympic Games. In the case of the Karate athlete, she belonged to the group of "Young Promises", with an age of 15 and South American Champion. **Purpose:** the initial objective was to evaluate the clinical-family psychological state, to later diagnose the degree of sports mental preparation, the level of mastery of psychological skills to face the different characteristic pressures of an elite athlete, and to know their moods. At the same time, a cognitive training program was applied whose goal was to strengthen their psychic abilities and develop mental strategies. **Methods:** The Test Profile of Mood States (P.O.M.S.) was applied as the main sports psychological reagents. The psycho-sports assessment was complemented with the Questionnaire of Psychological Characteristics Related to Sports Performance (CPRD), and finally, the Ways of Coping Check List was applied. Regarding the mental training program, Mental Training was used, proposed by the American Olympic Committee. For compliance with ethical parameters, each athlete signed an informed consent. **Results:** through the clinical-sports psychodiagnosis, the importance of the family element and the emotional stability that it provides to the athlete was identified, being one of the factors that stand out during the research; the competitor's vulnerability to imbalances in the family and personal structure tend to affect the motivation and results to be achieved. Even when there was an excellent disposition of the authorities, added to the total openness of the direction of the Methodological Area, the inclusion of the psychological-emotional factor in the training of the athletes was complex; This is largely due to the fact that mental preparation is not included in comprehensive planning in the early stages and adolescence. **Conclusion:** finally, it is highlighted that high performance athletes from Ecuador could drastically improve and increase their mental capacities, increasing their sports performance; if they included within their physical, technical and strategic planning, the training and management of psychic factors, considering that they may be applicable to everyday life situations.

KEYWORDS

mental training; high performance; psychology; health crisis

The mediating role of happiness and satisfaction between team trust and sport commitment in college basketball players

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ABSTRACT

Sports commitment reflects the individual motivation to maintain sports. Under multiple pressures from academic, training and employment and college, athletes are facing potential "Sports Commitment Crisis". Based on the popularity and particularity of basketball, college basketball players are facing the great potential pressure. In order to help college athletes improve their sports commitment level, this study intends to explore the mediating effect of happiness and team satisfaction on team trust and sport commitment through perceived team interaction. By using Team Trust Scale, Sport Commitment Questionnaire-2, Scale of subjective well-being and Athlete Satisfaction Questionnaire, this study investigated the team trust, sport commitment, happiness and satisfaction of 570 (Mean age = 20.15 years, 47% females, 53% male) universities basketball players who participated in CUBA southeast and northeast competitions. Results: (1) The main effects of gender on sports commitment ($F = 16.27, P < 0.01$) and happiness ($F = 5.93, P < 0.01$) were significant, on which male athletes were significantly higher than female athletes. (2) there was a significant positive correlation between team trust and sports commitment ($r = 0.601, P < 0.01$); (3) there was a significant positive correlation between team trust and happiness ($r = 0.273, p < 0.01$), while there was a significant positive correlation between happiness and sports commitment. ($r = 0.093, P < 0.05$); (4) there was a significant positive correlation between team trust and team satisfaction ($r = 0.688, P < 0.01$), and it is the same between team satisfaction and sport commitment ($r = 0.592, P < 0.01$). (5) the mediating effect of happiness and team satisfaction on team trust and sports commitment is significant, and the moderating effect of gender on team trust, happiness, team satisfaction and sport commitment is not significant. Conclusion: (1) there is a significant gender difference between the sport commitment of college basketball players and their happiness; (2) team trust can predict the trend of sports commitment and happiness and team satisfaction when teammates' trust is used to build the concept of team trust; (3) both happiness and team satisfaction can partially mediate the relationship between team trust and sport commitment.

KEYWORDS

Sport commitment;
Happiness; Satisfaction;
Team trust; Mediating effect

The relationship between goal orientation and commitment in sport: the mediating role of empathy

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ABSTRACT

The initiation, interruption and withdrawal of sports commitments are major scientific issues studied by the Institute of Sports Science, in which sport commitment reflect whether individuals can maintain their motivation to sport. To date, sports research has

KEYWORDS

Goal Orientation; Sport
Commitment; Empathy;
Mediating Role

shown that sport commitment is related to athletes' team interaction and goal setting, such as leadership style, motivation, and prosocial and antisocial behavior of teammates (O'neil & Hodge , 2019; Garcia-Mas & Palou et al, 2010; Al-Yaaribi & Kavussanu , 2018). In this study, we examined whether teammate's empathy may mediate the relationship between task and ego goal orientation and sport commitment. This study is aim to investigate the task and ego goal orientation, empathy and sport commitment in athletes. The potential mediating role of teammate's empathy was examined. We take a questionnaire to 556 athletes (Mean age= 21.0 years, 49.10% females, 50.9% male). This study uses the Task and Ego Orientation Questionnaire, Interpersonal Reactivity Index Scale and Sport Commitment Model (Duda,1993; Chi,1995; Davis, 1983; Scanlan, 2003). We evaluate the potential mediating role of teammate's empathy between task and ego goal orientation and sport commitment through structural equation modeling (SEM) (EQS 6.1; Bentler, 2003). The result shows that task goal orientation is positively related to empathy and sport commitment ($r = 0.601$; $r = 0.688$, $P < 0.05$) . Ego goal orientation is positively related to sport commitment ($r = 0.563$, $P < 0.05$) , however ego goal orientation is negatively related to empathy ($r = -0.277$, $P < 0.05$). Empathy is positively related with sport commitment ($r = 0.591$, $P < 0.05$). The mediation analysis shows that the relationship between task goal orientation and sport commitment is fully mediated by empathy, while the relationship between ego goal orientation and sport commitment is also fully mediated by empathy. The finding suggests that athlete's task goal orientation may facilitate athletic commitment, and this may be achieved by the empathy of teammates. In the future, leaders may add promoting task goal orientation and empathy and reducing ego goal orientation into the moral education of athletes. This approach can strengthen the athlete's positive character and at the same time promote the athlete's participation in sports.

An evaluation of the delivery of an intervention aimed at protecting and promoting the wellbeing of high-performance swimmers.

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ABSTRACT

In recent years, there has been an increase in interventions designed to protect and promote the wellbeing and mental health of athletes. Evaluations of such programmes have, however, reported varying effect sizes. One factor that may impact upon the effectiveness of an intervention is its actual delivery and implementation. However, to date, little consideration has been given to how to implement wellbeing interventions with athlete populations. Therefore, the purpose of

KEYWORDS

Action Research;
Intervention; Wellbeing

the present study was to evaluate the delivery of an online wellbeing intervention. In total, the intervention consisted of 8 one-hour online workshops; 6 workshops were delivered to swimmers ($n=44$), 1 to coaches ($n=18$), and 1 to parents of swimmers ($n=21$). The swimmer workshops covered a range of topics (e.g., transitions, identity) that had previously been identified as factors pertinent to wellbeing within high-performance swimming. The coach and parent sessions were focused on recognising and supporting swimmer wellbeing. An action research methodology was used to design, implement, and evaluate the delivery of the intervention. To enable evaluation, data were collected at the outset, as well as between each workshop, and on completion of the intervention. Data comprised semi-structured interviews, participant diaries, qualitative and quantitative questionnaires, informal conversations, and a researcher reflective diary. Overall participants identified a number of components that were thought to facilitate workshop delivery. Specifically, participants felt that the online delivery of the workshops was helpful, as was the inclusion of a professional athlete as a co-deliverer. Participants also preferred workshops that were interactive and activity-based. Particularly, the incorporation of various engagement techniques (e.g., pop-up questions, word clouds) were perceived to facilitate learning and enjoyment. However, not all activities were positively received. For instance, certain activities, such as the use of break out rooms received varying feedback and it became apparent that they were only deemed useful for very specific activities and when the ratio of participants to workshop facilitator were deemed appropriate. Taken together, the findings highlighted the importance of seeking feedback from participants when developing and implementing wellbeing workshops to maximise engagement and learning. Moreover, it is clear from this evaluation that there are specific elements related to delivery of such interventions that warrant consideration by researchers and practitioners seeking to deliver similar work in the future to enhance both the effectiveness and efficacy of their programmes.

An investigation of mental health of female student-athletes during Covid-19 pandemic regarding the personality traits and life skills

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ABSTRACT

Introduction: In 2020, athletes were seriously affected due to the spread of COVID-19, and some studies showed that female athletes felt more stressed than male athletes. Additionally, previous research reported that personality traits and life skills (LS) affect mental health (MH). However, few studies compare

KEYWORDS

female student-athletes; mental health; COVID-19; personality traits; life skills

female athletes and female non-athletes regarding MH and effects of personality traits and LS. Purpose: To investigate the difference in MH between female athletes and female non-athletes during the COVID-19 pandemic, and to examine the effects of personality traits and LS on MH of athletes and non-athletes. Methods: A survey was conducted from April to December 2020 in Japan. Participants were 102 female athletes attending a university specialized in PE and 77 female non-athletes attending a junior college and a nursing school. Mental Health Pattern (Hashimoto and Tokunaga, 1999) was used to assess stress and quality of life (QOL). Tokyo University Egogram (TEG), which assesses 5 ego-states; critical parent, nurturing parent, adult, free child (FC), and adapted child (AC), was used. Appraisal Scale of Required Life Skills for College Students Athletes (Shimamoto et al., 2013) was used to assess athletes' LS while Daily Life Skills Scale: College Student Form (Shimamoto and Ishii, 2006) was used for non-athletes'. A T-test was conducted to examine differences in stress and QOL between athletes and non-athletes. Stepwise multiple regression analyses (SMRA) were performed to investigate the effects of ego-states and LS on stress and QOL of athletes and non-athletes, respectively. Result: The result of the t-test showed that stress of athletes was significantly lower ($t(177) = 4.44, p < .001, d = .70$) while QOL of athletes was significantly higher ($t(177) = 3.65, p < .001, d = .55$) than non-athletes. Additionally, results of SMRA indicated that AC and FC were significant predictors of athletes' stress ($\beta = .43, p < .001$; $\beta = -.22, p < .05$) while LS was a significant predictor of non-athletes' ($\beta = -.51, p < .001$). In contrast, LS and FC were significant predictors of athletes' QOL ($\beta = .32, p < .01$; $\beta = .21, p < .05$) while LS and AC were significant predictors of non-athletes' ($\beta = .68, p < .001$; $\beta = -.17, p < .05$). Conclusion: Athletes seemingly maintained their MH using LS, which athletes are reported to have in higher levels than non-athletes according to previous studies. Ego-states and LS could be predictors of stress and QOL while predictors might be different from those of non-athletes. Coaches and sport psychology consultants need to observe female athletes' MH in the continuing COVID-19-related serious situation.

The influence of the absence of audiences on the antagonistic sports during the period of Covid-19: we will take the CBA league for example

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ABSTRACT

Objective: Taking CBA league as an example, the present study examined to compare the changes of basketball technical indexes of the absence of audiences or the presence of audiences, the correlation between technical indexes and scores, and the changed of home field effect under the two different conditions.

KEYWORDS

Basketball; Technical Index; Audience Effect; Home Field Effect

So that to explore the influence of the absence of audiences conditions on the antagonism court game. Methods: 13 technical indexes in 834 matches of 19 teams were collected. The changes of 13 technical indexes before and after the absence of audiences were examined with paired sample T-test and Pearson correlation analysis. Results: (a) There was a significant difference in free throw shooting percentage before and after the absence of audiences ($t = 1.967$, $P < 0.05$); The team score in the absence of audiences was significantly lower than that in the presence of audiences ($t = 4.426$, $P < 0.01$). The number of dunks per game in the absence of audiences was significantly lower than that in the presence of audiences ($t = 8.076$, $P < 0.01$). The number of assists in the absence of audiences was significantly higher than that in the presence of audiences ($t = -8.671$, $P < 0.01$). The number of errors in the absence of audiences was significantly higher than that in the presence of audiences ($t = -5.138$, $P < 0.01$). (b) When the game is played in the presence of audiences conditions, eight technical indexes including assist, 2-point shooting percentage, 3-point shooting percentage, dunk, turnovers, defensive rebounds, free-throw shooting percentage and fouls, are correlated with the game score; When the matches is played under the absence of audiences, 10 technical indexes, including assist, 2-point shooting percentage, 3-point shooting percentage, free-throw shooting percentage, turnovers and steals, are correlated with the game scores. (c) The comparative analysis shows that the home win rate of CBA teams after the absence of audiences is 12% lower than that the presence of audiences, and the net scores is 13.75, which is 1.61 points higher than that the presence of audiences. Conclusion: The absence of audiences will have significant impact on the shooting percentage, offensive index and defensive index. The absence of audiences will have a great influence on the competition atmosphere, which will reduce the athletes' performance desire and enthusiasm, and then reduce the intensity of the competition. In addition, the home field effect will weaken or even disappear under the absence of audiences.

Evaluating the focused attention and the visual differentiation of african ITF tennis players based on gender via the vienna test system (SIGNAL DETECTION TEST)

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ABSTRACT

Introduction. Attention is a fundamental variable for tennis players to achieve great performance. A tennis player should adapt rapidly to connect with their attention regarding explicit signals. For instance, to learn a new motor skill, to illustrate the backhand in tennis, we analyze the movement biomechanically and cognitively to evaluate errors. In such a context, attention is generally considered as a necessary resource, with limited

KEYWORDS

Attention; Reaction time; ITF tennis players; VTS; Signal

capacity that facilitates learning and performance improvement. Posner and Boies (1971), suggested that attention is an alert system, allowing us to respond to environmental stimuli with optimal vigilance. According to Im & al (2015) the combination of attention and visuomotor memory reduces motor error. Moreover, Krane & Williams (2010) analyzed aspects of elite performance. They identified some psychological characteristics specific to high performance; they mentioned a high capacity for attention, concentration, and focus. Purpose: The objective of the present research was to examine the attention capacity and reaction skill differences of ITF African tennis players in terms of gender. Methods. The research covered a group of 14 African ITF tennis players (girls: 7, age: 14,86), (boys: 7, age 16,29). Vienna Test System was used for participants, SIGNAL Test (signal detection) to measure the long-term focused attention and the visual differentiation. The following variables "correct reactions, incorrect reactions, average detection time" were controlled. SPSS 23.0 program was used for statistical operations, also the Speed/Precision of the players was measured position through the T-values of the test variables "Median detection time (sec.)" vs. Number of correct and late responses». Results. Analysis of the data in this research indicates that girls obtained an average of 47,43 in corrects reactions, while boys' average is 47,14. The difference between the two groups is therefore not significant (t -test = 0.097, $ddl = 12$, $p = 0.924$). Therefore, the males presented statistically better scores (incorrect reactions = 1,86 compared to the females (incorrect reactions = 2,29, for each part of the test ($t = 0,564$, $ddl = 12$, $p < 0,583$). On the other hand, male players with a faster response than females were not more accurate in the SIGNAL test. Conclusion. In this research, there were no statistically significant differences in correct and incorrect reactions. We can therefore affirm that gender does not affect attention and reaction in this research.

Examining the effects of exercise with different cognitive loads on executive function: a systematic review

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ABSTRACT

Background: Executive function (EF) components are crucial for mental and physical health, and have been proposed to underlie socioemotional development and academic skills. Physical exercise as an intervention for improving cognitive function, EF in particular, has been receiving growing attention, as physical exercise is easily accessible, cost-effective and promises many additional health-relevant benefits. Despite a wealth of existing studies that have investigated the effects of different exercises on executive function, the effects of exercise with cognitive load on executive function remain unclear. Objective: This study aimed to

KEYWORDS

executive function; exercise; cognitive load

systematically review both interventional and observational studies to examine the effects of exercise with different cognitive load on executive function. Methods: Three electronic databases (PubMed, Scopus and Medline) were searched from inception to December 2020. Studies meeting the following criteria were eligible for inclusion: intervention and observational studies; at least two different cognitive load exercises were simultaneously examined in the study; study outcomes included at least one measurement of executive function (e.g., working memory, inhibition, and cognitive flexibility); published in English and in a peer-reviewed journal; full-text available online; the population of interest was apparently healthy (without cognitive, mental, or physical impairment-including injuries); the primary outcome measure was cognitive function assessed by a valid and standardized measurement (e.g., neuropsychological tests) at baseline and after the intervention. Results: 24 studies were found to be eligible, including 15 observational studies and 9 intervention studies, with a total of 1845 participants. Results from 10 of the 24 studies showed that higher benefits of exercise on executive function were found after exercise with higher cognitive load, compared with exercise lower in cognitive load or no exercise control groups. Conclusions: The majority of studies in this review were observational cross-sectional designs. The review tends to support that higher cognitive load exercise is more effective for improving executive function compared with lower cognitive load exercise. However, a clear classification of exercise based on cognitive load was not identified.

A comparative study of ratings of perceived exertion in each stage of moderate intensity continues training and high intensity interval training

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ABSTRACT

The COVID-19 pandemic has limited many people to study, work and live at home. With the transformation of online learning, teleworking and home life, people are more sedentary, physical activity also fell sharply. On November 25, 2020, the World Health Organization pointed out in the latest "Guidelines on Physical Activity and Sedentary Behaviour" that if people take part in physical activities more consciously and actively, then 4 to 5 million people will avoid death each year. Moderate Intensity Continues Training (MICT) and High Intensity Interval Training (HIIT) are common physical activities. At present, in the related comparative studies on MICT and HIIT in the field of sports psychology, almost no one mentions the Predicted Ratings of Perceived Exertion (PrRPE), and the Session Ratings of Perceived Exertion (SRPE) is rarely mentioned, and both relevant research conclusions about the comparison of Ratings of Perceived

KEYWORDS

Moderate Intensity
Continues Training; High
Intensity Interval Training;
Ratings of Perceived Exertion

Exertion (RPE) in different training methods are still unclear. Therefore, it is necessary to compare the RPE at each stage of MICT and HIIT. The purpose of this study is to compare the participants' intention to choose between the two training methods one week after the end of the two acute training interventions, and try to explain the difference in choice intention from the perspective of RPE at each stage. The study selected 31 undergraduates majoring in sports and human sciences, including 19 boys and 12 girls. Participants take the acute MICT (or HIIT) and acute HIIT (or MICT) intervention tests respectively. The two tests use a cross-grouping method to balance the experiment, and the interval between the two intervention tests is 1 week. Participants need to report on RPE according to the main test's prompts during the different training phases of the intervention. One week after the two acute interventions, the participants will be investigated for their "exercise intention" through online communication. Through the analysis of the results, it is concluded that in the two acute training interventions, the PreRPE is higher than the RPE of the other training phases in the respective training methods; the time effect has no significant impact on the SRPE; the participants' optimization and adjustment of the rhythm strategy is reflected in the intentions of future training options.

The relationship between inhibitory control, physical fitness and activity: a systematic review

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ABSTRACT

Introduction: Inhibitory control involves being able to control one's attention, behavior, thoughts, and emotions to prevent dominant or habitual responses to stimuli. It plays an important role in child development, and is considered to predict future performance. Physical fitness and activity have been shown to improve cognitive performance and brain structure. Despite the relationship between physical fitness and inhibitory control being frequently studied in recent years, the results have been mixed. As such, this systematic review aims to synthesize information pertaining to the effects of physical fitness on the inhibitory control of healthy children and adolescents. **Method:** Cross-sectional studies that investigated the association between inhibitory control and physical fitness and activity in children were searched in Scopus and PubMed. Only healthy participants age ≤ 18 years were included. The language was limited to English with no restriction of publication date. Search and screening of title, abstract and full text were conducted by two independent authors (CCH and SYW). Inconsistency was resolved by discussion, and if disagreement continued, another author (TYL) was consulted. **Results:** There were 2680 and 3184 records identified in Scopus and PubMed, respectively. 4080 records

KEYWORDS

preadolescent; coordinatory; motor skill; cognitive control; selective attention

remained after removing duplications by citation managing software and their titles/abstracts were screened. Seventy-two full-text records were screened, resulting in the inclusion of 5 studies. There were 6 analyses related to the relationship between inhibitory control and physical fitness, 4 of which found that children with higher physical fitness also had better inhibitory control (3 of them were statistically significant). There were no analyses included regarding the relationship between inhibitory control and physical activities. Discussion: 42 studies investigated the association between inhibitory control and physical fitness and activity (physical fitness: 39 studies, physical activity: 9 studies) in children via inhibition tasks (e.g., Go/No-Go task, Flanker task, Stroop task). Most of these studies were excluded in the present study because they did not subtract the performance in the low-conflict condition from that of the high-conflict condition (e.g., Stroop incongruent minus congruent), as the observed effect could be found from the difference in information processing speed instead of inhibitory control.

The order effect of acute concurrent exercise on cognitive flexibility: a pilot study

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ABSTRACT

Cognitive flexibility, the ability to shift attention or responses corresponding to changing demands, has an essential role in our daily lives. While long-term training of combined different types of exercise (e.g., the concurrent exercise) has been associated with superior cognitive performance, the effects of acute concurrent exercise on cognitive flexibility have yet to be explored. Thus, the present pilot study attempted to examine the effects and the orders of the concurrent exercise [i.e., aerobic (AE) and resistance exercise (RE)] on cognitive flexibility. Fifteen younger adults (age = 22.2yrs, SD = 0.94) were randomly assigned to three groups [i.e., the RE before AE group (RAE), the AE before RE group (ARE), and the Control group (CON)]. The exercise programs for the RAE and ARE groups comprised a 13-minutes of RE (8 types, 1 set, 12 reps, and 70% 10-RM) and a 12-minutes of AE (40-59% heart rate reserve). Cognitive flexibility was assessed by a task-switching test, and the effect sizes of the test response times (RTs) and accuracy were calculated by Cohen's *d*. The RAE and ARE groups demonstrated shorter RTs in homogeneous (RAE: $d = -1.33$; ARE: $d = -1.45$), heterogeneous (RAE: $d = -0.73$; ARE: $d = -0.38$), switch (RAE: $d = -0.72$; ARE: $d = -0.44$), and non-switch (RAE: $d = -0.68$; ARE: $d = -0.33$) conditions of the task-switching test than the CON group. The RAE and ARE groups demonstrated higher accuracies in homogeneous (RAE: $d = 0.39$; ARE: $d = 0.05$),

KEYWORDS

Concurrent training;
Executive function; Shifting

heterogeneous (RAE: $d = 1.40$; ARE: $d = 0.68$), switch (RAE: $d = 1.29$; ARE: $d = 0.49$), and non-switch (RAE: $d = 1.07$; ARE: $d = 0.66$) conditions than the CON group. Besides, the RAE group had shorter RTs and higher accuracies in homogeneous (RT: $d = -0.19$; ACC: $d = 0.55$), heterogeneous (RT: $d = -0.38$; ACC: $d = 0.56$), switch (RT: $d = -0.39$; ACC: $d = 0.66$), and non-switch (RT: $d = -0.35$; ACC: $d = 0.33$) conditions than the ARE group. Our findings suggested the potential benefits of concurrent exercise on cognitive flexibility. Moreover, conducting RE before AE might result in greater impacts on cognitive flexibility, compared to the opposite. In order to achieve better understanding of the order effects of combined exercise on cognitive function, future research with larger sample sizes is recommended.

The unique contribution of motor ability to visuospatial working memory in school-age children evidence from event-related potentials

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ABSTRACT

Introduction: The majority of public health concern has centered around promoting aerobic fitness, muscular fitness, and cognitive functions. However, limited studies considered individual differences in motor ability as an independent factor and examined the underlying neuroelectric processes. **Purpose:** This study investigated the relationship between aerobic fitness, muscular fitness, and motor ability in children by assessing visuospatial working memory and neuroelectric activity. **Methods:** 76 children aged 8.7 ± 1.1 years old participated in this cross-sectional study. We assessed aerobic fitness using the 20-m endurance shuttle run test, muscular fitness (i.e., endurance, power) using a standard test battery, and motor ability (manual dexterity, ball skills, and static and dynamic balance) using the Movement Assessment Battery for Children (MABC-2). A modified delayed match-to-sample test was used to assess visuospatial working memory and the P3 component of event-related potentials. **Results:** Hierarchical regression analyses indicated that greater aerobic fitness was associated with smaller coefficient of variation of reaction time (CVRT) in 3s delayed conditions ($p's = .005$), greater muscular fitness was associated with higher response accuracy in both 3s- and 6s- delayed conditions ($p's \leq .036$), and greater motor ability was associated with higher response accuracy ($p's \leq .005$) and increased P3 amplitude in both delayed conditions at CPz ($p's \leq .002$) and Pz sites ($p's < .001$), after controlling for age, BMI-D (deviation from mean) and IQ. Furthermore, the association between motor ability and response accuracy in 3s- and 6s- delayed conditions ($p's \leq .019$) were independent of muscular fitness. **Conclusions:** The findings

KEYWORDS

event-related potential; cognition; hierarchical regression

from this study provide new insight into the differential associations of health-related fitness domains with visuospatial working memory, highlighting the influence of motor ability on brain health and cognitive development during childhood.

The relationship between physical activity and spatial working memory in preadolescent children: an ERP study

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ABSTRACT

Introduction: Although it has been suggested that physical activity and cognitive development is interrelated, the link between physical activity and neurophysiological indices of working memory operations has not yet been examined in preadolescent children. This developmental period has been considered critical because the brain developing significant cognitive functions is considered an important prerequisite for growth. Purpose: This study investigated the relationship between physical activity, spatial working memory, and neuroelectric activity in preadolescent children. Methods: A cross-sectional design was adopted. Fifty-four participants were recruited to fill out the International Physical Activity Questionnaire (IPAQ) to evaluate physical activity (PA) level. Participants were divided into low (LP, $n = 27$, mean age = 8.34 ± 0.99) and high physical activity (HP, $n = 27$, mean age = 8.95 ± 1.15) groups based on their physical activity level using median split. Additionally, all participants completed a modified delayed match-to-sample test to assess spatial working memory maintenance (response accuracy and reaction time) while electroencephalograph were recorded (i.e., P3-ERP). Results: Compared with the low physical activity groups, the high physical activity participants showed greater response accuracy in spatial working memory regardless of task conditions (p 's < 0.26), but no significant difference in reaction time was observed. The high physical activity groups also showed greater P3 peak amplitude in 6s delay condition at Pz sites ($p = .010$), but no significant difference in latency outcomes. Additionally, P3 peak amplitude was positively correlated to overall response accuracy ($r = .298$, $p = .027$). These results provide useful information regarding the benefits of physical activity on spatial working memory. Spatial working memory may proactively signal the need for control and require individuals to maintain goal-relevant information over sustained periods of time following a cue, which can improve cognitive function including proactive control strategy. Conclusion: The present study found that a higher level of physical activity is associated with better spatial working memory maintenance in preadolescent children. This improved spatial working memory performance could be a result of employing a proactive control strategy, which is optimal for tasks with high working memory demands.

KEYWORDS

exercise; cognition; childhood; event-related potential; P3

The effects of multi-modal exercise on shifting aspect of executive function in middle age adults: a pilot study

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ABSTRACT

Executive function is a superior cognitive function that manages and allocates people's cognitive resources. Previously, several studies have shown that exercise improves executive functions, but with a small magnitude (e.g., effect size). Multi-modal exercise is a combination of different exercise types, and we hypothesize that multi-modal exercise can better impact the executive functions through the combined effects afforded by the different exercises. However, there is insufficient literature to provide fundamental information about the combined effect of exercise in this population. The aim of this pilot study was to preliminarily investigate the effects of a multimodal exercise program on executive functions in middle age adults. In a within-group experimental design, sixteen healthy adults, aged 49-66 years, underwent a multi-modal exercise intervention, consisting of exercise training promoting muscular strength, flexibility, power, coordination, and balance, with a duration of 2 hours per session, and frequency of once per week. The total period of the exercise program was 12 weeks. Both executive function and physical fitness were assessed. The Trail Making Test (TMT), TMT-A and TMT-B, was utilized in order to measure the participants' visual attention and executive function before and after an intervention. For the primary result, a multimodal exercise program showed a possibility for enhancing the executive function, with a small effect size ($d=0.318$), but not for improving visual attention ability. For the secondary result, we found participants possess better balance ability ($d=0.846$), flexibility ($d=0.226$), strength ($d=0.13$) and lower BMI ($d=0.100$) after the intervention. Our results demonstrate that 12 weeks of multimodal exercise is a possible successful method of intervention for the enhancement of specific domains of executive functions and physical fitness.

KEYWORDS

Multi-modal; Exercise; Executive function; Middle age

The barriers of elderly males' participation in community-based exercise program

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ABSTRACT

For health promotion and aging prevention, increasing the elderly's physical activity via community-based exercise programs has been a national policy for most of the countries worldwide. However, literature has showed that, globally, there were significant gender

KEYWORDS

gender difference; physical activity; social ecological approach; policy

differences, in which numbers of male were significantly lesser than that of female, in the elderly's participation in community-based exercise group. Possible social-psychological correlates that preventing elderly males' from participation have not yet been systematically investigated. Therefore, the purpose of this study was to explore the social-psychological barriers of elderly males' participation in community-based exercise program. By way of snowball sampling, eight males, two wives of elderly men and one staff of a community-based exercise program from Taiwan were interviewed. The interview guide was developed according to the comprehensive perspectives of the social ecological model (Sallis et al., 2006; Sallis et al., 2012) and interview data were analyzed following the protocols of content analysis method. Results showed that elderly males' barriers included (a) intrapersonal factors: lack of incentives, low perceived competence and personal preference of activities; (b) interpersonal factor: poor interaction with group members; (c) environmental factors: insufficient accessibility and rigid schedule of programs; (d) programs contents: excessive exercise intensity and fixed styles. Two of the elderly reported that they stopped their exercise habit due to injury or degenerate physical conditions. The findings of this study suggest that the barriers of elderly males' participation in community-based exercise program consist in multi-levels, from inner level to outer level. Preference for individual exercise, low levels of perceived competence, and ineffective interaction with group members seem to be the main obstacles for elderly males to participate. Policy makers and program leaders pay more attention to potential gender differences, recognize elderly males' unique social-psychological needs, and act accordingly, may help to make a more gender-balanced participation in the elderly's community-based exercise program.

Influence of teaching style on students' motivation toward physical education

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ABSTRACT

Physical education teacher plays an important role in enhancing students' motivation for school physical education, leisure time physical activity, and healthy behaviors. Teachers can vary substantially in their teaching styles. Some teachers focus primarily on sparking enthusiasm in their students and begin by explaining the relevance of the lesson or by soliciting students' own experiences with the topic of the lesson. In contrast, other teachers focus on disciplinary matters first, and when students do not meet expectations, they rely on guilt-induction and criticism to correct students. The study aimed to investigate the influence of teaching style on students' motivation toward physical education with both variable-centered and person-centered

KEYWORDS

achievement goal theory; motivation; physical education; self-determination theory; teaching practice

approaches. 2319 students completed questionnaires related to teacher's emphasis on goals, teacher's basic psychological needs support or thwarting, basic psychological needs satisfaction and motivation toward physical education. We conducted confirmatory factor analyses to examine the reliability and validity of the questionnaires, and to identify empowering and disempowering teaching factors. The second order factor analyses demonstrated that three basic psychological needs support factors, social approval, performance approach and mastery loaded on empowering factors while three basic psychological needs thwarting factors and performance avoidance factor loaded on disempowering factors. Empowering teaching style was found to positively predict autonomous motivations, while disempowering style was found to positively predict controlled motivations and amotivation. We also found that according to perceived teaching style, students can be clustered into three groups, both high empowering and disempowering teaching practices, high empowering practices but low disempowering practices, and both medium empowering and disempowering practices. Moreover, students in cluster of high empowering but low disempowering teaching style presented highest autonomous motivations and lowest controlled motivations and amotivation, students in cluster of both high empowering and disempowering teaching style presented high autonomous motivation and high controlled motivation, and students in cluster of medium empowering and disempowering teaching style demonstrated medium autonomous motivation and medium controlled motivation. Our findings revealed that empowering and disempowering teaching practices affected students' autonomous and controlled motivations toward physical education simultaneously. Thus, in order to promote students' motivation toward physical education, the most adequate teaching styles require teacher to support students' basic psychological needs and to emphasize on mastery and social approval.

Poster Presentation

Therapeutic mechanisms of athletes' verbalization of movements in counseling

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ABSTRACT

During counselling, athletes often complain of somatic problems such as physical symptoms, poor movement and disordered movement (Yonemaru et al., 2018). The literature reports better psychological growth, personality development, and athletic

KEYWORDS

performance; verbalising movement; counselling; personality development

performance when athletes have access to a counsellor who can address such complaints from a psychodynamic approach (Nakagomi, 2014; Suzuki, 2014; Yonemaru, Suzuki, 2013). However, the effects of verbalising somatic problems on psychological, personality, or athletic improvements remain understudied, and the mechanisms and structures (i.e., psychological processes) thereof are undescribed. This paper investigates athletes complaining of poor movement and disordered movement and determines the structures of their verbalisations (i.e., psychological processes), and thus their effect on somatic problems during counselling. The participants comprised three athletes (A; High performance college student athlete, B; Top High school student athlete and C; Top Professional Athlete) who spoke about their poor movement and disordered movement among other athletes undergoing counselling for psychological or performance changes. The author had about 50 sessions for many years. The counsellor's psychodynamic approach to the symbolic interpretations of the athletes' somatic complaints and poor movement and disordered movement narratives were extracted. We analysed these meanings to investigate intrapersonal and poor movement and disordered movement narrative changes in athletes. The verbalization of A's disordered movement symbolized A's personality development task of independence. Both B and C showed similar trends. We found that their sport movements were self-expression their whole person. This result agree with previous study (Suzuki, 2014). A pure and seamless internal sensory world of self-expression is generated (born) when athletes execute a sport movement. Simultaneously, their body engages in realistic self-expression in their external world, and this self-expression reflects their physical capacities. It is possible that athletes' verbalisation regarding their movements may serve as a bridge between the bidirectionality of their internal and external worlds by re-expressing the two facets that allow athletes' holistic expression. This is an ego-syntonic process that observes and deals with the unconscious self in the internal world, and explores the means for reality adaptation in the external world. These processes may underlie the dual-faceted effects of verbalisation on emotional growth and improved athletic performance.

'If it's not on strava it doesn't count: the exploration of exercise addiction in recreational female runners'

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ABSTRACT

'One man's meat is another man's poison' (Thatcher et al. 2009, p.35). For many, exercising regularly is positively implemented into weekly routines and lifestyles. However this cannot be assumed for all individuals, as issues can arise such as addiction to exercise and its associated implications, including reoccurring injuries and eating disorders (Thatcher et al. 2009). Running is a

KEYWORDS

athlete; addiction; exercise; running; Strava

widely recommended form of exercising, due to the easily accessible nature, along with the many physiological and psychological benefits (Mutrie 2000; Biddle and Mutrie 2008; NHS 2020). A lack of understanding about addiction to exercise, specifically in female runners, is an area of speculation and therefore an ongoing issue. This is due to much ambiguity in establishing a definition, recognising symptoms and subsequently issues with implementing treatment interventions (Brewer 1993; Szabo 2010). Therefore, the aim of this study was to critically explore the antecedents, manifestations and consequences of exercise addiction. Following ethical approval, this study involved 8 female participants – aged over 18 years to consent for themselves - who had been involved in endurance running for at least 6 months, training at least 3 times per week. Two instruments were used for this qualitative study, including a 6-week analysis of physical activity data using the fitness app Strava, followed by semi-structured interviews. The thematic analysis technique was used to obtain relevant codes and themes from the primary data collected. Findings highlighted that despite being experienced with running and having knowledge of exercise addiction, participants were still likely to involve themselves in unhealthy exercising. Involvement in addictive exercise was due to a lack of support and guidance from athletics clubs, with unqualified advice being utilised through internal and external means, such as social media. Conclusions established that exercise addiction is a critical issue that needs to be addressed, due to a significant gap in the interventions provided to recreational club runners compared with the support offered to elite runners. The population competing at a recreational club level is significantly larger than the elite population who have professional guidance readily implemented into training routines. It was confirmed that regardless of the level of experience, performance, and competitiveness, the same issues - such as feelings of guilt and withdrawal - as a result of exercise addiction arose. Therefore, athletics clubs should implement more reliable and qualified interventions and guidance into recreational training routines to help prevent exercise addiction and its associated implications.

The influence on Japanese female athletes' body satisfaction of the drive for thinness and psychological dependence on coaches

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ABSTRACT

Female athletes are susceptible to low energy levels, hypothalamic amenorrhea, osteoporosis, and a constellation of clinical conditions defined as the female athlete triad (FAT) by the American College of Sports Medicine. Previous research has indicated that any female

KEYWORDS

female athletes; body satisfaction; drive for thinness; psychological dependence for coaches

athlete who is physically active, regardless of the level of competition, may exhibit symptoms of FAT. In particular, sports such as rhythmic gymnastics and figure skating, where an attractive figure is directly linked to competition performance, may generate some stress factor associated with weight loss and figure maintenance, and these stress factors are also associated with FAT. Moreover, an addiction to coaches and others is a factor that reinforces the state of eating disorders related to one of the symptoms of FAT. This study examined the influence on Japanese female athletes' body satisfaction of the drive for thinness and psychological dependence on coaches. This study adopted a cross-sectional online survey. The participants were 236 Japanese female athletes (mean age = 29.01, SD = 5.85). All the participants completed a questionnaire, including items for demographic variables, degree of satisfaction with one's physique, a drive for thinness scale, and a measure of dependence on a coach. Multiple regression analysis was performed to investigate the influence on body satisfaction of the drive for thinness and psychological dependence on coaches. It was found that "Drive for thinness (beta = $-.350$, $p < .001$)" and "Attention (beta = $.192$, $p < .01$)" of psychological dependence on coaches were associated with "Body satisfaction." These results indicated that athletes with a strong desire for slimming have low physical satisfaction, and athletes who want their coaches to pay attention to them have high physical satisfaction. This means health or knowledge education for athletes, to reduce unhealthy weight loss behaviors and promote physical satisfaction, is necessary. Furthermore, this finding suggests that coaches' understanding of and empathy with athletes reduces physical dissatisfaction and the stress factor associated with weight loss and figure maintenance. In future research, a survey of coaches and experts who assist athletes should be considered to develop teaching methods for preventing FAT by clarifying their ability to recognize FAT and understand the symptoms related to it.

Effect of an online mindfulness program on athletes during the Covid-19 pandemic: comparison between effective and ineffective groups

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ABSTRACT

This study investigated the effects of an online mindfulness program on the performance and mental health of Japanese athletes during the COVID-19 pandemic, comparing the results between the effective and ineffective groups. The participants were 22 college and company-athletes (male = 21, female = 1, mean age = 20.91, SD = 4.78). The participants attended an online mental training program, based on Segal, Williams, and Teasdale's

KEYWORDS

mindfulness-based cognitive therapy; mental health; performance; Japanese athletes; COVID-19

(2013) Mindfulness-Based Cognitive Therapy, comprising five sessions conducted either from August to September or September to October in 2020. They answered the Japanese version of the Athletes Mindfulness Questionnaire (AMQ), Athletes Performance Decrement Questionnaire (APDQ), Japanese version of Difficulties in Emotion Regulation Scale (J-DERS), and Kessler Psychological Distress Scale (K10) before and after the program. We divided the participants into two groups using the change in their AMQ score before and after the program. The effective group (13 athletes) had increased AMQ scores after the program, while the ineffective group (9 athletes) had decreased AMQ scores after the program. Two-way ANOVA between group and time was performed for each variable; a significant or significant trend interaction was observed in the APDQ ($p < .01$) and J-DERS scores ($p < .10$). We examined the simple main effects, and the results showed that the APDQ ($p < .01$, $d = .99$) and J-DERS scores ($p < .05$, $d = .47$) decreased after the program in the effective group. Furthermore, the post-program scores were significantly lower in the effective than in the ineffective group (p s $< .05$ – $.01$, d s = 1.25 – 1.70). However, for the K10 score, the main effect of group was significantly higher in the ineffective group ($p < .01$, $d = 1.48$), with the mean score reaching the K10 cutoff score (Mean = 15.72, SD = 2.00). These results suggest that in stressful situations such as the COVID-19 pandemic, athletes with increased mindfulness scores may have low psychological distress, and further decrease their performance impairment and emotional dysregulation through the program. However, athletes in the ineffective group showed higher scores for psychological distress before and after the program. Therefore, to provide effective support for such athletes, participants' psychological distress levels may need to be assessed before the program. Athletes with high psychological distress should receive individual or intensive clinical support, or program contents should be optimized to address their psychological concerns.

How does kendo master read the opponent? qualitative analysis of an expert kendo master's reading

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ABSTRACT

【Introduction】 A master of kendo, one of the ancient Japanese martial arts, can beat young kendo players despite being older in age. It is difficult for young athletes to beat masters simply by being superior in terms of speed and power. Why is that? This study attempts to examine how a kendo master wins, focusing on the "reading" of masters. **【Purpose】** The study aims to qualitatively clarify, through interviews, how the master reads, attacks, and wins the opponent's movements. Previous studies related to "reading" have been conducted with the concepts of "clinical intuition," "situational cognition," and "predictive

KEYWORDS

Reading; Martial Arts; Interview; Expert

judgment" in the field of nursing. In addition, the "reading" of shogi is positioned as a predictive judgment, and there are several pieces of research on strategies during artificial intelligence battles. However, research on "reading" that comprehensively captures contextual, spatial, cognitive, emotional, technical, and proficient perspectives is still scarce. **【Methods】** The subject of this study holds the 8th degree in Kendo. He is an outstanding kendo player who has won several Japanese Championships and is an experienced teacher. Data collection was conducted through two-to-one semi-structured, open-ended, and in-depth interviews by the two authors. The interview duration was two hours. The interview data were transcribed and then analyzed by the qualitative analysis method (Patton, 2002). **【Results and discussion】** As a result of the analysis, the kendo master's reading was classified into six subcategories, namely, "guess the spiritual energy," "understanding of the body and soma," "visualization of the flow of work," "invitation to attack," "creating inevitability," and "natural reaction of the body." These were finally divided into three categories, namely, "identifying the opponent," "direction of self and other movements," and "occurrence of attack." **【Conclusion】** The kendo master, by demonstrating the power of outstanding reading explained by three elements, identifies the opponent's ability, predicts the movement, and directs the flow of movement between the opponent and himself within the context of the attack. It is evident that an attack is composed of a series of steps. Further research should examine the relationship between reading and actual behavior, and focus on other masters.

The "Idea" of mastering the process of resilience and its effectiveness on the development of the growing youth into astute and confident young adults.

Rilwan Babatunde

N/A

ABSTRACT

Resilience is an elusive term or concept that is within its own paradox. The process of resilience is rooted deeply within biological construct seeded within the genetic codes that transpires the activation of bodily functioning, including the processes of activation and regulation of the central and peripheral nervous systems. On a macrosystemic scale, the idea of resilience was once deconstructed as two core concepts: adversity and positive adaptation (Fletcher & Sarkar, 2013). Related studies have conceptualized the expansion of resilience as a complex and dynamic process facilitated through interactions between individuals and biological, psychological, social, and ecological factors (Brody et al., 2016; Masten, 2014; Schultze-Lutter et al., 2016; Ungar, 2012, 2015). Within the notion of advocacy regarding the evolutionary process of positive youth

KEYWORDS

resilience; positive youth development; reflective analysis; mindfulness

development, the concept behind the process of resilience is an essential construct to the growing youth within society. It is of utmost importance and significance that youths, from an early age, begin to understand the elemental constructs leading towards the ideation regarding the process of resilience and its elusiveness within its paradox. The presentation proposes to clarify the luminousness regarding the integration of the expertise of the sport psychologist or mental consultant expert in accordance to the developmental process of resiliency of the youth through implementation of Gibb's (1988) model of reflective analysis. Breath training through practice of stillness, or mindfulness philosophies accompanied by knowledge within the depths of Gibb's (1988) reflective analysis initiates the growth process within the initial stages underlying the process surrounding the idea of resiliency and its effectiveness on youth development. As eloquently suggested within the study by Knowles et al., (2007), reflective practice is an approach to practice that involves creating opportunities to access, make sense of, and learn from the tacit knowledge. In other words, through Gibb's (1988) model of reflection, within the cognition of the mindful youth scales back the elusiveness surrounding resiliency back onto the microsystemic scale, thus enhancing mental clarity regarding an approach surrounding setbacks or challenges as various constructs to the whole. General implication regarding the source behind the powers of the strength in association to the supporting studies would support the idea regarding the process within the conceptualization of the mastery process of resiliency through its fundamental basis.

Football players' beliefs about doping use and anti-doping education

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ABSTRACT

Doping has been considered as a major threat to the integrity of sports. Current evidence indicates the pervasive nature of doping across levels and type of sport. In elite sporting system the prevalence of doping use has been estimated to be increasing. Anti-doping efforts have focused on the deterrence of doping in elite sport and football has not been an exception. Although football has been considered a sport of low risk for doping, there are several instances of doped athletes and team scandals that call for the development of effective interventions. Towards this end, the perceptions of those directly involved is of great importance. The present study aimed at recording football players' perceptions about doping use and anti-doping education. The sample consisted of 64 football players with an age range from 18 to 30 years old; 20 females. Participants were recruited from football clubs in Thessaloniki, a city in northern Greece and completed a self-reported questionnaire measuring

KEYWORDS

performance enhancement; education; clean sport

knowledge about doping incidents in their sport (a single question in a yes/no format), importance of the doping problem in professional and amateur level [responses were provided on a 5-point Likert scale ranging from 1 (too small) to 5 (too high)] club support of anti-doping education [three items with responses given on 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree)]. The results of the analyses revealed differences between male and female players about anti-doping education, where the majority of male players reported that football players receive regularly anti-doping education, in contrast to female players. Furthermore, differences emerged with respect to knowledge about doping incidents, where female players reported that football players never use doping substances. Similarly, differences emerged with respect to football players' competitive level. The majority of the professional players reported that their clubs used practices to raise awareness about anti-doping and they have learned how to react in doping offers, whereas amateur football players reported that this is not likely to happen in their clubs. These findings provide valuable information for the development of anti-doping interventions in football by highlighting that anti-doping efforts should aim at grassroots levels too and also take into consideration females, a rather underrepresented group of football players.

Determinants of whistleblowing intentions against doping in sport

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ABSTRACT

Whistleblowing intentions in other domains (e.g., government) are influenced by both organizational and personal factors (Cho & Song, 2015). These factors are expected to determine perceptions of costs and benefits from engaging in whistle-blowing behavior. A tentative model of the antecedents of whistleblowing intentions is tested with a battery of questionnaires that examined the psychological determinants of whistleblowing. More specifically the study examined the organizational support, protection and costs of whistleblowing behaviors, justice/legitimacy, personal responsibility, group identification, similarity/favorability, personal benefits, perceived behavioral control, attitudes and intention. The sample consisted of 299 (59.4% male and 40.6% female) athletes from Greece ($M = 22.3 \pm 5.75$ years) from 25 different sports. Most of them were competing at regional (50.3%) and national level (30.4%), while some were competing at international (7.4%) and local level (11.5%). The mean of the years of experience was 10.66 ($SD = 5.73$) in the sport and the majority of the participants were training many hours per week ($M = 9.42$, $SD = 6.36$). The reliability analysis showed that Cronbach's α scores were acceptable for all the variables of the study. Multiple regression analysis was used to

KEYWORDS

clean sport; reporting misconduct; doping

test if the Organizational Structure factors (Support, Protection, Justice/ Legitimacy) together with Personal factors (Personal responsibility, Group Identification, Role Model Favorability and Similarity) predict participants' Perceived Benefits. The results of the regression indicated the predictors explained 38.6% of the variance ($R^2 = .39$, $F(7,266) = 23.89$, $p < .001$). It was found that personal responsibility significantly predicted perceived benefits ($\beta = .14$, $p < .001$), as did role model favorability ($\beta = .01$, $p < .05$) and role model similarity ($\beta = .09$, $p < .01$). The same analysis performed for the prediction of Perceived Costs. The results of the regression indicated the predictors explained 10.5% of the variance ($R^2 = .11$, $F(7,267) = 4.45$, $p < .001$). It was found that organizational support ($\beta = -.20$, $p < .01$) and group identification ($\beta = -.14$, $p < .05$) significantly predicted perceived cost by the participants. Finally multiple regression analysis was also used to test if the Perceived costs and benefits together with Perceived Behavioral Control and Attitudes towards whistleblowing significantly predicted participants' Intentions to blow the whistle. The results of the regression indicated the predictors explained 55.5% of the variance ($R^2 = .56$, $F(4,82) = 25.58$, $p < .001$). The factors that predicted strongly the intentions of the participants to report doping behaviors was personal benefits ($\beta = .60$, $p < .01$), followed by PBC ($\beta = .53$, $p < .001$) and finally attitudes towards whistleblowing ($\beta = .24$, $p < .05$), while personal costs did not contribute to the prediction. The findings of the present study provide an overview of the variables that influence the decision making process towards whistleblowing in sport.

The effect of the integrated body intelligence quantakinetic operational fitness on the global interhemispheric index

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ABSTRACT

Peak Performance in athletes is the main challenge of every training programme and performance optimization is the main goal for Olympic athletes. The Integrated Body Intelligence Quantakinetic Operational Fitness (IBQ) methodology is a form of training that uses movement patterns coded in a motor alphabet to develop operational potential. By associating it with a set of specific procedures for self-control and psycho-sensory self-regulation, it allows rapid and stable entry into the optimal state of action. The aim of the present study is to assess the effects of the IBQ psychomotor training program on the brain activity of the athletes and to see their interhemispheric index. The training programme consist in three modules of one week each. A pilot study has been conducted assessing the brain activity (EEG) of three Olympic athletes before and after each training module

KEYWORDS

Optimal Performance; Brain Connectivity; elite athletes; Fractal Dimension

(collecting data for 6 times pre post intervention). EEG data were analyzed calculating the fractal dimension, which is a non-linear method of measuring the complexity of brain signals. The Fractal Dimension (FD) was calculated by means of the algorithm proposed by Higuchi. The average of all values obtained for each channel was calculated to obtain a global measure of FD. Fractal Dimension separate values for the right and left hemisphere were also found to calculate the FD asymmetry. Normally an increased fractal size is associated with greater cognitive flexibility. Moreover, also interhemispheric connectivity which is a measure of functional connectivity has been performed. For each subject and for each condition the connectivity index, based on the imaginary part of the coherence was computed. The connectivity index was evaluated from a global perspective as well as in specific regions of the brain. Our preliminary findings showed that IBQ increased the global fractal dimension and the global interhemispheric index after IBQ intervention particularly looking at the beta band with a negative rebound immediately after each specific module of intervention, which means that the intervention have a long term effect with a negative short term impact on the brain activity of the athlete.

Exploring emotional experiences across different genres of videogames

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ABSTRACT

Videogames are analogous to sports in many ways (e.g., individual- and team-based performances, recreational and competitive contests), and there is a growing interest in how concepts from sport psychology can be applied in eSports (Leis et al., 2021). Videogames have long been known to elicit emotions (Mehrabian & Wixen, 1986). In sport psychology, sport-specific situational factors are posited to differentially influence athletes' emotional experiences (e.g., sport type, task characteristics; Cerin et al., 2000). Though different types of videogames have also been thought to affectively engage gamers in distinct ways (Dale & Green, 2017), limited research has considered whether or how emotional experiences differ between videogame genres. The purpose of this study was to examine peoples' experiences of positive and negative emotion-eliciting events in videogames and to explore how their sentiments towards these experiences differ between genres. Participants (n = 3026) were recruited from social media platforms and asked to describe one positive and one negative emotional event stemming from a videogame they had recently played. They were also asked to indicate which category best matches their chosen game based on their playstyle: first-/third-person shooters, multiplayer online battle arenas (MOBAs), strategy/card games, massive multiplayer online games, sports/fighting games, single-player casual games, or single-player story-

KEYWORDS

Emotions; Videogames; eSports; Sentiment Analysis

based/horror games. A sentiment analysis was conducted using sentimentR (Rinker, 2019) which calculates a sentiment score based on the valence of language used in text. A paired-samples t-test revealed sentiment scores of descriptions of positive emotional events ($M = 0.19$, $SD = 0.27$) were significantly more positive than scores of descriptions of negative emotional events ($M = -0.16$, $SD = 0.23$), $t(3015) = 54.01$, $p < 0.001$, 95% CI = 0.34–0.36. Descriptions of positive events from sports/fighting games had the most positive scores ($M = 0.23$, $SD = 0.24$), and first-/third-person shooters had the least positive scores ($M = 0.15$, $SD = 0.26$). Descriptions of negative events from MOBAs had the most negative scores ($M = -0.18$, $SD = 0.22$) and single-player casual games had the least negative scores ($M = -0.12$, $SD = 0.24$). These findings highlight the affective trade-offs between the emotional highs and lows of different game genres. As emotions can influence people's enjoyment of the games they play (Behnke et al., 2021), and their in-game performance abilities (Behnke et al., 2020; Tamir & Ford, 2009), future research on recreational and competitive outcomes of videogames should consider their findings in the context of the games' genres.

Does imagery ability predict mental toughness in sport?

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ABSTRACT

Introduction. Mental toughness one of the most commonly cited skills contributing to performance excellence (Bull, Shambrooke, James, & Brooks, 2005; Jones, Hanton, & Connaughton, 2007; Gould, Dieffenbach, & Moffett, 2002; Mattie, 2009) and the mentally tough athlete can achieve the best performance in a highly challenging situation (Karolczak-Biernacka, 1986; Sankowski & Gracz, 2007). Imagery training has been used to improve performance in competition (Cumming et al., 2007; Morris, Spittle, & Watt, 2005) and to enhance mental toughness (Stycharczyk, Clough, 2017). Imagery ability in sport is "one of the most important factors influencing imagery effectiveness" (Munroe-Chandler & Hall, 2007, p. 194). The imagery used by athletes has cognitive and motivational functions (Paivio, 1985) where general mastery motivational (MG-M) imagery includes images of feeling confident, in control, or mentally tough (Hall et al., 1998, Munroe, Giacobbi, Hall, & Weinberg, 2000). Purpose. In our study, we examined the correlates of imagery ability in sport and mental toughness but also answered the question if imagery ability could be a predictor of mental toughness. Methods. A total of 176 athletes from different sports volunteered to participate in the study. Their ages ranged from 18–54 years ($M = 28.06$, $SD = 8.68$) and most had participated in their sport for quite some time ($M = 6.40$ years, $SD = 5.05$). The level of experience of the athletes varied from recreational to international level. More males (53% of the sample) than females volunteered to

KEYWORDS

imagery ability; mental toughness; mental training

participate. Measures used were: The Imagination in Sport Questionnaire in the short version (ISQ; Budnik-Przybylska, 2014) and Mental Toughness Index (MTI; Gucciardi et al., 2015 in Polish adaptation). Results. We observed positive correlations among all subscales of the ISQ and MTI ranged from 0.29 (for physiological feelings subscale) to 0.50 (for affirmation subscale). Moreover linear regression analysis revealed that imagery ability explained 32% of mental toughness ($R^2 = 0.32$, $R = 0.57$, Corrected $R = 0.29$, $F = 11.39$; $df = 7$, $p < 0.001$). Conclusions. Our study has applied implications and is relevant for illuminating the link between imagery and mental toughness.

Executive function and stress: the moderating role of mental resilience in young athletics

Hsin-Chin Chen, Chun-Ju Liao, Chung-Min Chen, Ta-Chun Chou, Yuan-Fang Song and Pei-Shan Li

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ABSTRACT

Studies in sport psychology have suggested the relationship between the sports performance and the stress (e.g., Jones and Hardy, 1989) and the link between executive function and physical activity (e.g., Fedewa & Ahn, 2011). However, few research has examined the relationship between executive function and stress in elite vs. normal young athletics. Miyake and Friedman (2012) have defined the executive functions as a set of general-purpose control processes that regulate one's thoughts and behaviors. Such functions could help alleviate the stress associated with training and competition in athletics by mentally inhibited unrelated distractors in the mind and the environment. Studies have indicated the role of mental resilience, the capacity to maintain performance under pressure, in stress coping of athletics (Bejan & Tonita, 2014; Geber et al., 2018; Hannan et al., 2015; Kaiseler, Polman, & Nicholls, 2009). The present study examined the moderating role of mental resilience in the relationship between executive function and stress in elite vs. normal young athletics, which has not been specifically examined based on our knowledge. A group of elite young athletics ($n = 163$) and a group of normal young athletics ($n = 394$) were recruited. All participants were active student athletics in high schools. Both groups of participants were tested with the Depression Anxiety Stress Scales, the Sports Mental Resilience Scale, and the Flanker task, which examined the ability of executive control (or inhibition). The hierarchical multiple regression was applied to examine the moderating role of mental resilience in the relationship between executive function and stress between elite and normal young athletics. Whereas the inhibitory cost, an index of executive control, was significantly associated with the stress in elite young athletics, such relationship was not obtained in normal young athletics. Besides,

KEYWORDS

Stress; Executive Function; Mental Resilienc

the significant relationship between the executive control and the stress disappeared after the scores of mental resilience were controlled in the hierarchical multiple regression, suggesting the moderating role of the mental resilience on the relationship between the executive control and the stress among elite young athletics. The mental resilience, which helps maintain performance under pressure, may cooperate with executive control, which helps achieve current goals by inhibiting unrelated distractors, in handling stress induced during training and competition among elite young athletics. Our results suggested the need to take into account both the mental resilience and executive function in the interventions of stress coping in athletics during training and competition.

The effect of PETTLEP imagery and action observation on imagery ability and performance among taiwanese junior archer athletes

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ABSTRACT

Introduction: Imagery is a kind of simulation process of actual experience which combine different body perceptions; whereas, action observation is to observe successful actions through the video watching, and further acquiring the context of sport execution. Both motor imagery and action observation can effectively improve action skill performance and learning. However, in past research, the motor imagery and action observation have generally been used separately. In recent years, studies have demonstrated that the combination of the motor imagery and action observation would be more effective than the performance and learning of action skills alone. Meanwhile, the combination of motor imagery and action observation can help to guide imagery, enhance the clarity and vividness of imagery. This study based on the PETTLEP imagery model pattern proposed by Holmes and Collins (2001) and the mirror neurons theory of action observation, where the PETTLEP imagery, action observation, and combining PETTLEP imagery and action observation are tested. **Methods:** We used three different intervention methods to test the effectiveness of the archery skill performance, learning, and imagery ability among the junior high school archery athletes. In the first phase of the study, Taiwanese middle school and junior college athletes were selected as participants, archers were selected from six junior high schools, and the participants were divided into nine in the PETTLEP imagery group, 11 in the action observation group, nine in the combining of PETTLEP imagery and action observation group, nine in the control group, enrolling a total of 38 individuals in a six-week intervention course where they learned to enhance athletes' athletic archery skill performance, learning; furthermore,

KEYWORDS

functional equivalence; motion simulation; action representation; motor imagery ability

we used Chinese version of the movement imagery questionnaire-3 to measure action imagery ability three times per week. Results: Via the analysis of Two-Way ANOVA mixed design, no significance effects were found in four different groups between imagery ability and archery performance. However, the significant differences were found in different tests between imaginary ability and archery performance. Conclusion: Current research will address further discussion by the results and proposed future research direction, also may provide practical suggestions for archery athletes and coach to apply mental practice in shooting performance.

Psychometric properties of the chinese version coach—athlete attachment scale

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ABSTRACT

Introduction: Since Jowett (2005) developed the 3Cs model of coach—athlete relationship, the research trends of influencing variables for coach—athlete relationship became vigorous in sport psychology domain. Variety of important factors such self-concept (Jowett, 2008a), efficacy beliefs (Jackson, Grove & Beauchamp, 2011), sport satisfaction (Jowett & Nezelek, 2012), motivation processes (Jowett, Adie, Bartholomew, Yang, Gustafsson, Lopez-Jimenez, 2017) was confirmed in past literatures. However, the impact of personal differences such as personal traits as antecedent variable was mentioned rarely. Therefore, Attachment theory has been a topic of growing interest in sport psychology while exploring the interpersonal relationship between coach and athlete. **Purpose:** Based on Coach—Athlete Attachment Scale (CAAS) proposed by Davis and Jowett (2013). The present study aimed to develop a revised scale of Chinese version for the Taiwanese athletes and coaches, and describe the psychometric evaluation of Chinese version Coach—Athlete Attachment Scale. **Methods:** The present study adopted survey method including two procedures. 150 student athletes from senior high school team Division I were participated. The collected data was analyzed with exploratory factor analysis to test the factorial structure, item discrimination and internal consistency of the questionnaire. The data collected from another 170 student athletes from senior high school team Division I were used to proceed confirmatory factor analysis, average variance extracted amount, composite reliability, and criterion related validity, predictive validity and measurement invariance. **Results:** The results of exploratory factor analysis showed a two-factor Chinese version Coach—Athlete Attachment Scale with 10 items, named anxious attachment and avoidant attachment; the two factors could account of total explained variance 62.4%. Meanwhile, the result of confirmatory factor analysis of overall index model was found to be good overall fit

KEYWORDS

anxious-attachment; avoidant-attachment; coach-athlete attachment; coach-athlete relationship

(χ^2 (34) = 76.62, CFI = 0.96, NNFI = 0.95, RMSEA = 0.076, SRMR = 0.047, χ^2/df = 2.25, CN = 158). Cronbach's α of the constructs are .87 and .81. To sum up, the analysis results indicate adequate internal consistency reliability, factorial validity and criterion related validity. Most important, factorial invariance of Chinese version Coach—Athlete Attachment Scale was demonstrated across male and female student athletes among senior high school. Conclusion: The results of this study suggest that the Chinese version Coach—Athlete Attachment Scale may be a useful self-report measure with good reliability and validity. Current study provides researchers with a preliminary measure regard to attachment theory can be applied to sport field.

Profiling the personality of student athletes

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ABSTRACT

In addition to environmental factors, personal characters play an important role on ones behaviors. Anshel (1997) pointed out that personality traits can be used to predict the level of achievement on the sports field. Therefore, understanding the personality traits of athletes is helpful to cope the stress from high-intensity training and competition, as well as might balance of their strengths and weakness. The purposes of this study were to explore the difference between gender and sports expertise on the personal characters, classify the athlete personality and count the proportion of different genders and sports expertise on each personality pattern. This study used the Big-Five personality traits scales to measure sophomore student athletes in a university from 2014 to 2021. A total of 253 sports department students completed the measurement. There were 165 males and 88 females with an average age of 19.6 ± 1.4 . The results indicated that: There were 126 athletes whose sports expertise are open skills sports and 127 are closed skills sports. The results show that males are higher than females on emotional stability, extroversion, and openness. Open skills athletes are more conscientious than closed skills athletes. The results of hierarchical cluster analysis and K-means cluster analysis find that all athletes can be clustered into three personality patterns. The three groups have significant differences in the Big-Five personality traits scores. The three personality patterns named respectively colorful personality, light personality and friendliness. There are 77 athletes in colorful personality group who have the highest scores on all Big-Five personality traits in all participants. They are 75.3% males and 24.7% females, 74% open skills athletes and 26% closed skills athletes. There are 73 athletes in light personality group who have the lowest scores on Big-Five in three groups. They are 54.8% males and 45.2% females, 69.9%

KEYWORDS

Big-Five personality traits; closed skills sports; open skills sports; mental state; cluster Analysis

open skills athletes and 30.1% closed skills athletes. There are 103 athletes in friendliness group who have the highest score among the Big-Five personality traits scores. There are 65.0% males and 35.0% females, 73.8% open skills and 26.2% closed skills. This study finds three personality traits patterns base on Big-Five. It would help to provide an understanding of the personality traits of university student athletes. It is needs to explore the relationship among those personality traits patterns and athletes affect, cognition and behavior.

Self-regulation strategies in elite athletes under pressure: a systematic review

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ABSTRACT

Introduction: In sports, choking under pressure—suboptimal performance in stressful situations—is one of the main concerns for elite athletes. Athletes are always struggling to cope with pressure and meet self-imposed performance expectations in critical situations. One of the most widely used strategies by elite athletes is self-regulation, which helps to self-generate a particular psychophysiological coping reaction to improve emotional stability when performing under pressure. **Purpose:** The purpose of this review was to provide an overview of empirical studies that have tested self-regulation strategies used to alleviate choking in elite and athletes. **Methods:** A search was conducted for experimental, quasi-experimental, and single-case studies that were finalized before April 30, 2021, by using the keywords “self-regulation” and “choking” and “sport performance.” **Results:** Seven applicable studies were found for this review. The results indicated that elite athletes use a greater amount of self-regulation skills. They also have greater capacity to make complex decisions under pressure. In addition, the most-reported effective self-regulation intervention was proactive metacognitive and motivational behavior. **Conclusion:** Elite athletes use more self-regulation skills, especially those with proactive metacognitive and motivational behavior. Self-regulation based on choking models is beneficial for performing under pressure, and these results contribute to the growing evidence supporting performance enhancement due to self-regulation skills. These findings suggest that elite athletes may be more aware of their strengths and weakness as well as better able to transform this awareness into action, which means self-regulation can be controlled to a greater extent by elite athletes. However, most of the reviewed studies examined the short-term effects of the choking intervention, which meant that intervention effects were only measured immediately or within few days. Future studies should look into the long-term effectiveness of interventions.

KEYWORDS

self-regulation;
metacognitive; awareness;
choking

Influence of personality traits of collegiate athletes with injury experience on post-traumatic cognition and growth

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ABSTRACT

A traumatic events does not have a uniformed effect on the attitudes and behavioral patterns of the victims. According to the post-traumatic growth model, post-traumatic cognitive processes are closely correlated with the individual characteristic (reflecting the expression of 5 traits of personality) displayed during the pre-traumatic period. The same traumatic event that have facilitated the cognitive process resulting post-traumatic growth (such as expanded meaning of life) for one could be just a source of psychological pain for another. While recent concept of trauma includes something people can experience during daily lives such as injury, disease, or failure of job seeking, the sport injury is known to be the major source of trauma among athletes. Therefore, it is imperative for athletes to transform such negative event into a chance of growth by proper cognitive processes. Thus, the purpose of this study was to identify how the personality traits of athletes with injury experiences could influence the post-traumatic cognition and the post-traumatic growth. Two hundred seventy collegiate athletes with recent injury experience in Seoul-Kyunggi areas completed the questionnaires, and frequency, correlation and multiple regression analyses were performed by using SPSS 23.0 program. The results showed, first, all 5 traits of personality were significantly correlated with the post-traumatic-cognition and -growth. Secondly, conscientiousness and agreeableness negatively influenced the post-traumatic cognition while neuroticism had a positive influence. Next, conscientiousness, extraversion and agreeableness positively influence the post-traumatic growth while agreeableness had negative influence. These results indicated that the personality traits of athletes can further facilitate the negative beliefs associated with injury once experienced. Injury experience for athletes can lead to post-traumatic stress disorder with negative consequences on rehabilitation or recovery. Considering the fact that the psychological problem associated with injury even after full physical recovery may result in the early retirement, it is important to identify the negative thoughts after the injury and transform this into a positive influence. According to the results from this study, facilitating positive cognition by identifying the personality traits could be a good starting block for such approach.

KEYWORDS

Sport Injury; Big Five Personality; Trauma; Posttraumatic Cognitions; Posttraumatic Growth

A meta-analysis of the effects of taekwondo training on physical self-efficacy

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ABSTRACT

Physical self-efficacy is self-confidence related to the body, and precedent studies have shown that Taekwondo training has an effect on physical self-efficacy. Therefore, this study attempted to draw a comprehensive conclusion by presenting an objective and systematic basis through meta-analysis on the effect of Taekwondo training on physical self-efficacy. The literature search was conducted on thesis published in Korea until September 30, 2020. The database for literature search is RISS (Research Information Sharing Service), KISS (Koreanstudies Information Service System), KCI (Korea Citation Index), DBpia (DataBase Periodical Information Academic) was used. In the literature search, 'Taekwondo' was searched in each database, and self-efficacy was searched in the research in the results, and all studies that included self-efficacy were searched for in Taekwondo-related studies. The literature to be analyzed was selected using PICOS (Cooper, 2010). As a result of searching each database for the selection of literatures to be analyzed, 4 dissertations and 4 academic journals were finally selected. For the effect size, the standardized mean difference was calculated using the mean and standard deviation of physical self-efficacy (perceived physical ability, physical self-presentation confidence) according to Taekwondo training. Statistical analysis was performed using the Review Manager Version 5.4 (RevMan, The Cochrane Collaboration, Oxford, UK) provided by the Cochrane Collaboration. The I² statistic was used to examine the heterogeneity between selected literatures. And the risk of bias of each study was evaluated through a risk of bias graph, and a funnel plot was used for publication bias. As a result, the overall effect size of physical self-efficacy was calculated as .58 (95% CI = 0.28, 0.87). And, the effect size of perceived physical ability was .74 (95% CI = 0.22, 1.26), which was a moderate effect size, but the effect size of physical self-presentation confidence was .42 (95% CI = 0.11, 0.73), showing a small effect size. In conclusion, Taekwondo training was found to have an effect on physical self-efficacy, and in particular, it was found to have more effect on perceived physical ability. Through this study, the effect of Taekwondo training on physical self-efficacy was verified, and the result of this study will be helpful in developing a program for improving physical self-efficacy.

KEYWORDS

Taekwondo training; physical self-efficacy; perceived physical ability; physical self-presentation confidence; meta-analysis

Pre-competition athletic mental energy and performance relationships physically disabled table tennis players

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ABSTRACT

Energy is defined as "the capacity for doing work (Giancoli, 2009, p. 172)." In the physical world, energy enables machines to work so cars can drive; factories can produce products; houses' machines can cook, wash, and clean. As human beings, we eat

KEYWORDS

elite physically-disabled athletes; optimal state of mind; the psychology of sport excellence

food, which transfers into energy so we can engage in all kinds of movements and activities (Whitney & Rolfes, 2016). In the psychology domain, researchers believe that mental energy has the same function in our everyday life. Mental energy is defined as "... an individual's ability to continue long hours of thinking, concentrating attention, and blocking distractions to achieve a given task (Lykken, 2005)." However, the association of mental energy with athletes' performance has rarely been examined. The purpose of the present study was to examine the pre-competition mental energy performance relationships with two samples of physically-disabled table tennis players. Study 1 sampled 9 elite disabled table tennis players and administered the Athletic Mental Energy Scale (AMES, Lu et al., 2018) one day before competition in 5 international tournaments and collected their subjective performance after each competition. Results found that each elite physically disabled tennis player demonstrated different levels of mental energy before the competition. Also, the associations between pre-competition mental energy and performance were personal-specific and individualized. Study 2 sampled 77 National-level physically-disabled table tennis players using the same measures as Study 1. Results confirmed that AMES has appropriate internal reliability, and has a high correlation with each other. Further, participants in Study 2 have higher mental energy scores than participants in Study 1. Also, they showed the same low score in tireless as participants in Study 1. Moreover, it was found confidence was the strongest predictor of performance. The influence of mental energy in sports performance was only found in early narrative reports in the 1990s. However, how mental energy associates with athletic performance has been rarely examined in empirical studies. Our study used two studies and provided the preliminary results of the mental energy-performance relationships among physically disabled table tennis players. Future studies are needed to examine whether mental energy associated with both abled and disabled athletes' performance in different sports. And, how mental energy might influence athletes' behavior and psychological responses. Future studies may examine the influence of athletic mental energy on performance and psychological responses in abled athletes or different sports.

Social support and school adaptation in talented young dancers

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ABSTRACT

Many talented young dancers participate in dual career in dance and education and are commonly face difficulties in school adaptation when studying at high schools. Social support seems an important resource to help young dancers meet to the demands and characteristics of the school system and dance

KEYWORDS

Gifted and talented education; Significant other; dance training

training. The purpose of this study was to investigate the relationship between social support and school adaptation in talented dancers of senior high schools. Ninety-three participants (92 females) were recruited from 3 dance programs of senior high schools. The participants were asked to complete questionnaires regarding demographic information, social support and school adaptation in a rest setting. Descriptive statistics, Pearson Product-Moment correlation, and stepwise multiple regression were utilized for data analysis. The results indicated that the two measures reported adequate internal consistency and the correlation between social support and school adaptation was positive. In addition, the multiple-regression analysis demonstrated that "teacher support" ($\beta = .37$) and "instructors' support" ($\beta = .34$) could significantly predict school adaptation, accounting for 44 % of the variance of school adaptation. The findings suggest that teacher supports can lead to better academic and behavioral results, greater involvement with schools, and lower risk of bullying, and instructors' supports can increase dancers' confidence and achievement motivation. Therefore, teachers should care about students and adjust their teaching strategies in a timely manner to provide immediate after-school counseling, and dance instructors should arrange appropriate training intensity to prevent their students from physical and mental exhaustion. Future researchers are suggested to consider examining the relationships between motivational climate and school adaptation, as well as school adaptation and academic and dancing achievement, for further exploring effects of school adaptation.

The relationship between college student-athletes' perfectionism and subjective well-being: the mediating effects of life stress and coping strategies

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ABSTRACT

Perfectionism is a multidimensional personality characteristic including several constructs that together encapsulate two higher-order dimensions (Adaptive and Maladaptive Perfectionism). The different dimensions of perfectionism have been found to contribute differentially to adaptive and maladaptive outcomes. Previous research has indicated that perfectionism may be an important antecedent of subjective well-being and when under different stress coping strategies can affect the level of subjective well-being of a perfectionist (Stoeber, 2014). The purpose of this study is to examine the relationship between perfectionism and the subjective well-being of college student-athletes through two studies and to examine the mediating effects on life stress and coping strategies. In the first study 351 college student-athletes (170 males and 181

KEYWORDS

coach; parents; stress; structural equation model

females) with an average age of $20.67 + 1.73$ years were asked to complete the "Multidimensional Perfectionism Scale", "Stress Coping Strategies Scale" and "Subjective Well-Being Scale". The Structural Equation Model analysis finds that adaptive perfectionists tend to positively predict their subjective well-being using active coping (positive correlation) or avoidance coping (negative correlation). However, maladaptive perfectionists are leaning toward negatively predicting their subjective well-being with active coping (negative correlation) or avoidance coping (positive correlation). In the second study 313 college student-athletes (119 males and 114 females) as subjects with an average age of $20.23 + 1.62$ years were requested to fill out the "College Student-Athletes Life Stress Scale" in addition to the above-mentioned scales in the first study. The SEM analysis suggests that adaptive perfectionists (high standards) are likely to positively predict their subjective well-being indirectly via life stress and active coping. On the other hand, maladaptive perfectionists (pressure from coach and parents) are liable to negatively predict their subjective well-being indirectly using life stress and active coping. The results showed that Combining Hewitt & Flett's (2002) perfectionism "stress generation" model and Lazarus & Folkman's (1984) "stress response" model to explore the relationship between athlete perfectionism and subjective well-being is a feasible direction. However, this study was basically a cross-sectional study. The Longitudinal study is also suggested in the future to figure out the relationship among these variables. Findings also suggest that future investigations of the relationship between perfectionism and subjective well-being take into consideration the mediating effects of life stress and coping strategies. Finally, the findings of this study and recommendations are available for school teachers, sports coaches, counselors, and future research.

"Sky Is the limit", motivational antecedents and psycho-social consequences of enhancement culture: the crossfit and spartan race cases in comparison.

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ABSTRACT

Introduction: the fluidity of the contemporary society has produced, as an opposite movement, the need to establish forms of consolidation and strengthening of the human that can cope with the sense of fragility that permeate the different contexts of life. Within this framework we find the theme of enhancement. The term enhancement indicates a contemporary cultural tendency that refers to the systematic application of technologies to human beings - directly and indirectly - in order to increase their possibilities of action. In socio-cultural terms, this translates into the idea that human development is achieved by

KEYWORDS

Crossfit; Spartan Race; Enhancement; Sports culture; Case study

continuously overcoming our limits in the various areas of life. Purpose: this research aims to explore the motivational antecedents and psycho-social consequences of the concept of enhancement within two sport disciplines, CrossFit and Spartan Race, which consider the overcoming of limits as key glue for the development of their practitioner communities. Methods: the research adopts case study as a methodology to study the CrossFit and Spartan Race communities. Desk analysis of international web-sites of the two disciplines, semi-structured interviews and focus groups with practitioners were implemented with the aim of understanding values, practices and artifacts of enhancement within these sports communities. Results: in both communities, the crossing of limit is a crucial value that acts as an aggregator of collective identities. Overcoming the limit becomes a beneficial cathartic experience through which individuals experience full self-realisation. In CrossFit, overcoming the limit is realised through a series of highly codified practices, both dietary and training, while in the Spartan communities it is exhibited through a series of practices that athletes tailor on their self, according to the knowledge of their own body. In both communities, the culture of enhancement brings a series of risks regarding psycho-physical health. In the Spartan Race community, the value of overcoming the limit is extended in every aspect of life with risky consequences in terms of life balance. In CrossFit, the social relevance of overcoming the limit among the community of practitioners can become a psycho-social determinant of body over-exploitation leading to a number of physical consequences that include: rhabdomyolysis, fainting in training, over-training, over-nutritional integration and injury. Conclusion: the research suggests that representations and values of enhancement within sports communities and groups may explain certain psycho-social antecedents of negative and unhealthy behaviours in sports.

An exploration of the role of the captain in the sport of cricket.

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ABSTRACT

Captains play an essential role in the success of cricket teams, however, to date there is limited research exploring the nature of the role or the associated challenges. Unlike in many other sports, the cricket captain is appointed/employed by the club, independent of the coach, and as a result fulfils a role different to many sports team captains. The aim of the current study was to develop a deeper understanding of the captaincy role within the sport of cricket. More specifically, the study aimed to examine what captains perceive to be important about fulfilling the requirements of the captaincy role, and what advice they would give to aspiring captains. Participants were six male professional

KEYWORDS

Captaincy; Athlete Leadership; Decision-making; Leadership

(English County Championship) cricket players, who were captains for their club (County) at the time of the study, all recruited through personal contact. The study adopted an interpretative phenomenological approach (IPA), a well-established approach to qualitative research in psychology. Semi-structured interviews were used to explore the participants lived experiences of captaincy in cricket. Analysis of the data resulted in the emergence of nine first order (personal attributes, selection, motivation to do role, context, different aspects of the role, influencing factors, approach to captaincy, personal development, challenges) and 70 second order themes. The findings suggest that the experience and role of captains in an elite cricket environment is both complex and multi-faceted, with captains in cricket central to the team's decision-making processes. The importance of captains leading by example was highlighted in the study as were the significant organisational demands that are placed on the captain. Opportunities for personal development were highlighted as a significant issue by participants, a practical challenge that professional clubs need to look to overcome to maximise the effectiveness of the captains they employ.

Stressors and coping strategies of elite para snow sport athletes

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ABSTRACT

In both par and disability sport the ability to cope with pressure and stressors while competing has been highlighted by both para-athletes and their coaches as a particular challenge that needs to be overcome. Existing research has highlighted similarities in the psychological skills utilised by both able-bodied and para-athletes in seeking to cope with the demands of training and competition. In contrast, the few studies that have focused on para-athletes have suggested differences in the perceived stressors experienced, suggesting that greater exploration of the nature of stressors experienced by para-athletes is warranted. Also, while research continues to develop relating specifically to disability sport there is currently very little research exploring the skills used, and challenges faced in elite para-snowsport athletes. Therefore, the aim of the current study was to explore the psychological challenges and stressors experienced by elite para-snowsport athletes, and also to explore the coping strategies used. Participants were five elite male para-snowsport athletes who had competed for their country in one of the para-snowsports disciplines (Nordic Skiing, Alpine Skiing, or Snowboarding) in the previous 12 months. The participants were interviewed using semi-structured interviews to gain an insight into their experiences of stressors and use of coping strategies. Data were analysed adopting a reflexive thematic analysis approach. The analysis of the data resulted in nine superordinate

KEYWORDS

Snowsport; Para-athletes;
Stressors; Mental health;
Coping

themes (preparation strategies, psychological strategies used, stressors, mindset, mental health, mental health strategies, positive environment, challenges, and psychological challenges) and 52 second order themes emerging from the data analysis process. The results highlighted the potential impact of performance factors and stressors on athlete mental health and wellbeing, and the importance of developing healthy strategies to positively impact upon their mental health. The importance of developing positive and supportive practice and performance environments was also highlighted as important with participants suggesting this to be an important factor in supporting their ability to thrive and to cope effectively with performance-based stressors. Future research needs to further explore the psychological needs and demands associated with elite disability and para-sport participation within specific contexts to help practitioners to better understand how to individualise the support they provide.

Challenges and career transitions of the Italian handball player. a qualitative study

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Università Cattolica del Sacro Cuore

ABSTRACT

Psychological studies of Athletic Career have increased greatly in recent years (Stambulova, Wylemann, 2014; Stambulova, 2016). The challenge of dual careers represents an important opportunity for high-level athletes to go through career transitions with more tools (Morris, et al. 2021), but it represents itself a challenge, especially for those sports that do not ensure a total financial support even in the middle of their sporting career. Handball in Italy at the moment is located within this scenario, and the new federal movement in charge is introducing a new and more complex look at the lives of its athletes. The aim of this study is to get to know in detail the phases that characterize the career of the Italian handball player, understanding the challenges and demands, both in the sporting and extra-sporting spheres. By means of a qualitative study, using an interpretative phenomenological approach, semi-structured interviews were planned with: 13 athletes of the Italian National Junior Men's Team, 10 athletes of the Italian National Senior Men's Team and 10 athletes of the National Senior Women's Team. The interviews have been entirely transcribed and a thematic analysis of the content has been carried out. The analysis of the interviews shows that male athletes declare a greater investment in the athletic career, to make it a profession. The level of competition is higher, the climate of the national teams is positive and there is a good bond between teammates. Women say they have pursued an athletic career out of passion, and they have invested more in training. The transition described by the athletes as most critical is the junior to senior transition, when the demands coming from

KEYWORDS

athletic career; handball athletes; career transitions

the sporting context increase, it is often necessary to move to different cities/regions/countries. Adaptation to new contexts seems to be strongly influenced by the presence of support figures (coaches, team, family members). The Dual Career emerges as a central challenge: both in terms of reconciliation study - sport (for junior athletes) and for the reconciliation work - sport (many senior athletes work in companies) for the time and the many transfers to which they are subject. There is a strong need for pathways that can guide the sporting and personal growth of athletes. Possible outcomes could be the development of Dual Career services for athletes who wish to take advantage of them and more structured collegiate projects for younger prospective athletes.

Coping style is related to practice type and performance among individual sport athletes

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ABSTRACT

Introduction: Successfully managing stress is pivotal for athletes' sporting development and long-term success. Problem-focused coping (actively removing stressors) is believed to be superior to emotion-focused (altering emotional response) and avoidance coping (evading stressors) for optimal mental health outcomes (i.e., reduced burnout). While researchers have inferred that social climates contribute to an athlete's coping tendencies, to date, no associations have been drawn between types of practice activities (e.g., group practice) and coping. Furthermore, limited work exists assessing how different coping strategies impact performance over time, particularly in individual sport domains. Purpose: We explore how coping is associated with time spent in different practice activities and performance in an individual (rather than team) sport, namely, alpine ski racing. Methods: We analyzed data from a previously used sample of youth alpine ski racers frequenting ski developmental academies in the United States ($N = 169$, M age = 15.8 ± 1.3). Athletes completed a retrospective, ski-specific participation history questionnaire (PHQ) and coping function questionnaire (CFQ). Performance data were collected using a national performance database for technical and speed ski disciplines. We used mixed regressions to model practice and performance changes across time as a function of coping style (i.e., problem, emotion, avoidance). Results: Problem-focused coping was associated with more time spent in coach-led 1-on-1 practice ($p = .028$), group practice ($p = .009$), and indirect ski involvement ($p = .049$). Emotion-focused coping was associated with more group practice ($p = .021$), whereas avoidance coping was associated with less time spent in play ($p = .014$). Performance analyses revealed problem-focused coping was related to better performance improvements over time (p 's $< .025$), while emotion-focused coping was related to worse

KEYWORDS

problem-focused; emotion-focused; avoidance; ski racing; social

performance improvements ($p = .034$). Conclusion: Findings provide preliminary evidence that the social structure present when practicing with coaches and peers may help individual sport athletes develop problem-focused coping strategies and the resources necessary to confront stressors during development. Relationships in group settings may naturally develop some emotion-focused coping tendencies as a result of increased opportunities to express emotional distress; however, a focus on coping with emotional responses may not be deleterious to an athlete's long-term sport success if problem-focused coping tendencies are developed in tandem from these social practice structures. In conclusion, athletes in individual sports should be encouraged to train and play with others who have similar performance goals to nurture optimal coping tendencies that could ultimately translate to positive performance outcomes.

The role of athletes' interoceptive awareness during the rebooting in sports training and competitions

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ABSTRACT

In May 2020, in Italy like in other nations worldwide, the government started to ease the lockdown regimen and sports training and competitions were gradually resumed. In a study of the rebooting phase, Guicciardi and Pazzona (2021) reported low levels of athletes' optimism and positive expectation for the future, as well as low vigor and mental toughness scores. However, the literature regarding the rebooting phase is scant. Further research can shed light on the psychological implications of the rebooting (e.g., perceived stress and related factors) and support the enactment of appropriate behaviors for practicing sports during an unprecedented situation. This study aimed to examine the impact of interoceptive awareness—the mindful perception of stimuli coming from the body (Craig, 2002)—towards positive and negative stress. The Italian 10-item version of the Perceived Stress Scale (IPSS-10; Mondo et al., 2019) and the Multidimensional Assessment of Interoceptive Awareness (MAIA; Cali et al., 2015) questionnaire were administered to 221 athletes. Results of the first stepwise regression analysis revealed that Trusting, Attention-regulation, Self-regulation, and Emotional awareness scales of the MAIA were predictive of positive stress. Specifically, while Trusting, Attention Regulation, and Self-regulation were positive predictors, Emotional Awareness was a negative predictor of positive stress. Results of the second stepwise regression analysis revealed that Trusting, Emotional Awareness, and Self-regulation scales of the MAIA were predictive of negative stress. Specifically, while Trusting and Self-regulation

KEYWORDS

Negative stress; Positive stress; Interoception; Resumption

were negative predictors, Emotional awareness was a positive predictor of negative stress. Findings suggest that athletes with high capacity of trusting, self-regulation, and attention regulation could likely be prone to perceive stress as more positive, and therefore be better protected towards negative stress. On the other hand, athletes with high levels of emotional awareness were probably prone to perceive less positive and more negative stress. Accordingly, athletes could engage in mindful activities related to the body to reduce their perceived stress levels and better deal with an unprecedented situation.

Mindfulness-based interventions for sport performance in figure skating athletes

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ABSTRACT

Figure skating is a sport that requires significant athletic ability and mental toughness. Elite figure skating athletes begin training at a very young age with a substantial portion of training time being spent on the ice in an effort to enhance sport performance. A focus on the mental training components of figure skating is something that is relatively new in comparison. The use of mindfulness-based interventions has been used as a means of enhancing sport performance in elite athletes' populations across multiple sports. Presently, there are few studies on the use of mindfulness-based interventions for the purpose of enhancing sport performance in figure skating athletes. The purpose of this literature review is to summarize the empirical findings on the effectiveness of mindfulness-based interventions to enhance figure skating athlete sport performance. A literature search was undertaken using Psych info, Web of Science, Ebscohost, ProQuest, and Cochrane databases and references of retrieved articles. The search included original articles published from 2014 to 2021. The main search terms were mindfulness programs, sport performance, and figure skating athletes in a variety of combinations. All articles were coded for design, study population, and outcome measures. The literature search returned 8 articles and multiple mental skills training program interventions for figure skating athlete sport performance. Despite methodological limitations in the research design, the results of the literature review demonstrates the use of Mindfulness-Based Cognitive Therapy (MBCT) and Acceptance and Commitment Therapy (ACT) programs as effective for enhancing figure skating athlete's sport performance. Future research with improved experimental designs and a larger participant base is recommended. The findings of the review support the use of mindfulness-based interventions as an important factor in enhancing figure skating athlete sport performance.

KEYWORDS

Mindfulness-based programs; sport performance; figure skating athletes

Career adaptability among college student-athletes in Taiwan: the predictive power of grit and psychological capital

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ABSTRACT

For decades, career development among student-athletes has increasingly drawn the attentions of the International Olympic Committee and governments worldwide; moreover, career adaptability has also become an emerging topic in athlete career development. Although grit and psychological capital are essential to athletic performance (Chen & Lin, 2019; Chen, 2019), their effects on the career adaptability in college student-athletes remained unexplored. Research in Taiwan on the factors of college student-athletes' career adaptability remains scarce. Therefore, the purpose of this study was to 1. investigate differences in career adaptability by examining individual variables; 2. explore the associations between grit, psychological capital, and career adaptability; and 3. examine the effects of grit and psychological capital on career adaptability at both the total and subscale levels. An online questionnaire was administered using the Psychological Capital Scale, Grit-S scale, and Career Adaptability Scale as research instruments. This study recruited 192 (male: 119, female: 73) college student-athletes from Taiwanese university sports related departments. T tests and one-way ANOVA were employed to identify significant mean differences, and correlation analyses and multiple regression were adopted to examine relationships. The results indicated that 1, for all demographic variables, significant difference was evident in the overall scores of career adaptability by work experience. 2, significant positive correlations were determined at the total scale level between the three major constructs. For the subscale level, the results indicated that in addition to the insignificant correlations in the "passion" subscale of grit, the "optimism" and "resilience" subscales of psychological capital, and all subscales of career adaptability, the subscales were significantly positively correlated overall. 3, sex, sports seniority, weekly training hours, working experience, and student club participation did not affect career adaptability. However, psychological capital and grit were significant predictors at the total scale level of career adaptability, and the model explained 58.1% of the variance. Fourth, the sense of hope, self-efficacy, and resilience subscales of psychological capital were significant predictors of scores on the career adaptability subscales. This study's results suggest that career adaptability of student-athletes is affected by whether they work. Career adaptability, grit, and psychological capital were positively intercorrelated, and psychological capital was a significant factor influencing career adaptability, especially in terms of hope, self-efficacy, and resilience. Future research is warranted to identify other factors of career adaptability to develop feasible interventions for enhancing the career adaptability of college student-athletes.

KEYWORDS

self-efficacy; multiple regression analysis; resilience; sense of hope; work experience

The analysis of make-up behavior and self-presentation from female athletes

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ABSTRACT

Beauty is the conditions that female athletes can be appreciated, and it is also a weapon to marginalize used by the patriarchy. It's not only the capital used by female athletes to compete, but also is a dominant that oppresses women (Chia-ling Hung, 2003). In this opinion, we realize just like Tae kwon do, karate and rhythmic gymnastics et cetera, there is necessarily for female athletes to have a make-up behavior in the competition. When the game was processing, there were also an invisible standard about the good looking. Even inside themselves, they were always comparing with each other. And it made us interested, especially for why just female athletes doing the make-up, and what will happen if they don't do it. Regarding the above subject, purpose of the research was to explore the background and the mental process for the make-up behavior of female athletes. Method: we reviewed the literature, including to analyze the multi-faceted for different types of sports and groups which playing sport. The literatures contain eight papers from Airiti Library, five papers from google search, and three theses from the internet. Results has found out that women in common performance types of sports have make-up behaviors, this behavior increases their performance in general, and improves their competition achievements through the condition of make-up. When the athletes into the court with the completely makeup, they can also feel more confident. We suggesting the research can analyze the make-up behavior from female athletes with the social dimension in the future, or explore to be of charming appearance female athletes become a materialized label which the audiences pay attention to.

KEYWORDS

female athletes; make-up behavior; mental process

Sport psychology at "Centro de Treinamento Esportivo - UFMG" during the Covid-19 pandemic in the year of 2020

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ABSTRACT

Introduction: The social distancing measures imposed through the Covid-19 Pandemic in 2020, suspended the face-to-face work of all

KEYWORDS

Sport Psychology; Social Distancing; Sport Context

sport teams. The challenges resulted from the distancing, demanded adaptations from the multidisciplinary teams that work in a sports context, defying their creativity and competence. Most professionals, including the Sport Psychologists from the "Centro de Treinamento Esportivo da UFMG" (SP/CTE-UFMG), needed to develop new intervention strategies in order to make feasible the work sequence. Purpose: Present structured actions during the social distancing due to Covid-19 for the continuity of the work of SP/CTE-UFMG. Methodology: The group interventions and the individual services with athletes, families and coach staff, have been adapted by SP/CTE-UFMG with weekly online meetings, aiding the coaches in training adaptations and usage of remote activities. The observations of training practice and competitions, as well as the psychological evaluations were done through video chat apps and social networks. Firstly, the SP/CTE-UFMG developed a mental care campaign using motivational images and messages, instructions and support to the anguish and psychic disorders that occurred due to the social distancing and the Pandemic, which were posted in social networks for the teams. Afterwards, through the year, interventions were made dealing with group cohesion, motivation, relaxation, imagination, mental practice, goal setting, stress and anxiety analysis and control, Mindfulness techniques and activation control. Results: 351 individual services were made in 2020 with athletes of four sports (Athletics, Judo, Swimming and Taekwondo), also 355 group services, 174 services with coaches and staff, 92 family services, 209 training observations and 4 competition observations. The SP/CTE-UFMG team also developed actions to support the sector professionals, presenting seminars with 16 instruments and interventions presentations, 12 supervision and strategy planning meetings, 3 lectures with guests who work with Physical Education, Psychology and Psychiatry. The sector has also contributed to the accomplishment of 7 speeches to other institutions. Conclusions: It can be concluded that the SP/CTE-UFMG team's work with the adaptation of interventions and processes to the electronic Medias has helped athletes, coaches and multidisciplinary teams during the process of social distancing, bringing new strategies and work perspectives to be developed in the sport context.

Relationship between athlete's anxiety about athletic characteristics and psychological athletic performance

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ABSTRACT

In order to achieve good performance in competitive sports, enhancement of the psychological aspect is considered important along with enhancement of the physical and technical aspects. The psychological factors necessary for competitive situations are called "psychological athletic ability," and it is said that improving

KEYWORDS

Choking under pressure;
Trait anxiety; Performance

this psychological athletic ability leads to the demonstration of ability (Tokunaga, 2000). For this reason, competitive athletes are required to improve their psychological competitive ability. On the other hand, excessive anxiety and tension are among the psychological factors that hinder the demonstration of ability in competitive situations, and in order to improve competitive performance, it is necessary to understand the characteristics and causes of anxiety and deal with them. However, how trait anxiety, which is associated with demonstrating competence in competitive situations, relates to psychological athletic performance has not been examined much. Therefore, the purpose of this study was to clarify the relationship between athletic trait anxiety and psychological competitive ability in competitive situations. The subjects of the study were 731 university student-athletes. The questionnaires used were the Diagnostic Inventory of Psychological-Competitive Ability for Athletes (DIPCA.3) and the Trait Anxiety Inventory for Sport (TAIS.2). Partial correlation analysis of TAIS.2 and DIPCA.3, and multiple regression analysis with TAIS.2 as the independent variable and DIPCA.3 as the dependent variable were conducted. In addition, an uncorrelated t-test was conducted with the independent variable of TAIS.2 total score above the mean as the high group and below the mean as the low group, and DIPCA.3 as the dependent variable. The results of partial correlation analysis showed that there was a low to moderate negative correlation. The results of multiple regression analysis also indicated that the TAIS.2 "tendency to disorganized movements," "tendency to avoid competition," and "tendency to loss of confidence" negatively affected the DIPCA.3 "motivation to compete," "confidence," "operational ability," and "cooperativeness. The results of the t-test showed that the high TAIS.2 total score group scored significantly lower than the low TAIS.2 total score group on the DIPCA.3 "competitive motivation," "operational ability," "cooperativeness," and "total score. These results indicate that there is a relationship between sport athletic trait anxiety and psychological athletic performance, and that sport athletic trait anxiety has a negative effect on psychological athletic performance. These results indicate that it is necessary to consider athletic anxiety and provide psychological support when improving psychological competitive ability.

Action research on the experience of implementing the course "Body-Mind Axis Awareness of the Ya-Yue Dance"

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ABSTRACT

"Dynamic Principle of the Body-Mind Central Axis of Ya-Yue Dance" and the research laboratory for Enhancement of Cognitive Function of the "Body and Mind" promoted by Chen Yu-Xiu have gradually developed into the basis of "Body-Mind Axial Awareness" (BMAA).

KEYWORDS

Body-Mind Axial Awareness; Psychological Flexibility; Ya-Yue Dance; Somatic Wellness; Mindfulness

There are several types of research related to the above courses: 1. Context and background discussion 2. The physiological and perceptual changes of the case in the rehabilitation department or nursing home of the hospital, and the study of the movement analysis and the improvement of disease pain for a single object training 3. Research on the changes in mental and cognitive functions of elementary, elementary and college students (such as: working memory, emotional perception, proprioception, mental toughness ...). Up to now, these studies are mainly aimed at people with different physical and mental difficulties, or participants recruited from cultural ability cultivation or school curriculum learning groups derived from research subsidies. There are no courses directly aimed at the general community. And the study of changes in physical and mental experience. The researcher in this article led a one-year BMAA course in a designated community in Hwa-Lien, eastern of Taiwan, and offered three consecutive courses, once a week, each with 12 lessons. This study explores how the researcher guided the participants to explore and dialog with their mind and body axis through the process of action research to assist the participants of the course. Through the improvement of the motivation, emotions, thoughts and ontological awareness of their own movement, the participants provide continuous feedback to the leader for further reflection and adjustment of the course, and to revise the original exercise content each time. In terms of course implementation, this research found that: The BMAA course is suitable for participants of different ages. 2. The number of people/course design is quite flexible and easy to implement. 3. Continuous course adjustment is necessary. 4. Different teaching methods are required for different participants. 5. Facilitating the participants appropriately to experience the key points of body-and-mind-axis-awareness. In terms of body and mind movement awareness, this research found that: 1. Help the participants produce a mindful experience of the dynamic process of the body axis. 2. The participants seem to be able to gradually apply the mind and body axis awareness to daily life. 3. The participants' physical and mental problems are improved. 4. The psychological flexibility of the participants seems to be improved.

My companion all the way- a study on companion of athletes' parents

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ABSTRACT

Athletes' career development has been an important research issue for decades. Parental involvement is considered an important factor related to athletes' sport participation, that is, athletes might be influenced by their parents when arranging their career development. In recent years, various types of empirical research

KEYWORDS

career planning; role model; talent development; career education; development model of sport participation

on parental involvement provide theoretical frameworks and applications in sport settings. However, most of the research was based on western culture. Another research gap was that previous studies were conducted mostly from the perspective of athletes' career development and transition. Given that athletes and their parents always influence each other during their career development processes, this research focused on athletes' parents and the research purpose was to explore the psychological change of athletes' parents when they accompany their children throughout the athletic career. By purposive sampling, two elite athletes and their parents were recruited and interviewed; one of them is a female trap shooting athlete competing at the international level, the other one is a retired professional basketball player. Content analysis was used to analyze the interview through open coding, axial coding, and selective coding. Three higher-order themes were found. First, "before and at the beginning of children being athletes" was the initial stage of athletes' career development. This category revealed parents' impression and expectation of being athletes, and the issues they met when their children became competitive athletes, and the social support they provided. After that, the second stage was "athletes' journey of achieving excellence", which included parents' various emotion and their communication with and accompanying their children. Finally, the last stage was related to transition- "athletes' retirement and career transition". In this stage, parents' emotions with both joy and worries were revealed and social support was still the crucial factor. Through the qualitative interviews, this study probed the companion of athletes' parents from their own perspectives and found that they experienced a psychological shift as children's talent development through three stages. Parents offered various types of supports during this third stage as the child dealt with their stress and negative events. The results also lead to the communication between athletes and their parents and can be a reference for research related to parental involvement in the future.

Can aerobics instructors' transformational leadership style predict participants' exercise happiness and loyalty to course?

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ABSTRACT

In busy lives, people pay increasing attention to relieving stress, improving physical health and sculpting their bodies. Fitness group courses can improve cardio-vascular fitness, muscular strength, body flexibility, fat consumption and stress relief. In group courses, instructors play an important role in their participants' motivation. Fitness group instructors with a transformational leadership style can effectively help participants

KEYWORDS

Fitness group courses; leadership; happiness; loyalty

strengthen their internal motivation and is closely related to their happiness and loyalty level. However, past studies of transformational leadership have not applied to aerobics instructors. Therefore, based on transformational leadership theory the four dimensions transformational leaders (i.e., idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration), this study try to examine the fitness group instructors as exercise course leader. This presentation is to feature a Taiwanese study where the researchers explored the relationship between aerobics instructors' transformational leadership style and participants' exercise happiness and loyalty to their aerobic course. To measure those variables, 245 participants (36 male and 209 female) who enrolled in aerobic courses were recruited as research subjects. The research results were as following: (1) the transformational leadership of aerobics instructors had a significant effect on participants' happiness; (2) the transformational leadership of aerobics instructors had a significant effect on participants' loyalty; (3) participants' happiness had a significant effect on their loyalty and (4) the happiness of participants had a partial mediating effect on the transformational leadership and loyalty. The results reveal the transformational leadership of aerobics instructor can partially affect participants' loyalty to the course by their exercise happiness. Based on Bass's (1985) transformational leadership theory, this research contributes to suggestions for aerobics instructors in inspirational and emotional way in their courses.

The construction of adolescents' life skill indexes in sport by qualitative approach

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ABSTRACT

Psychology research in recent years. Life skills were defined as: "The ability to effectively deal with the needs and challenges of daily life, and these abilities can enable individuals to be adaptable and produce positive behaviors". Life skills are included in the field of positive youth development, but not all the goals of positive youth development are related to the development of life skills. The purpose of this study was to develop indexes of life skill in sports, and these indexes are suitable for Taiwanese adolescents. The research method consisted of three stages. First of all, this study collected literature related to adolescents' life skills and constructed preliminary index framework through literature analysis. The indexes were revised through two focus group interviews in the second stage. The focus group members include seven physical education teachers who are familiar with this field and have a master's degree or higher. Finally, Expert validity was constructed from consulting nine experts. These experts all have PhD degrees and have related publications in this field. The opinion consultation method was to collect opinions through

KEYWORDS

Positive Youth Development; Positive Psychology; Core Competencies

open questionnaires. The results revealed that the index framework contained eight First-level indexes, including teamwork, goal management, time management, emotional skills, interpersonal interaction, leadership, problem solving, reflection, and a total of sixty-three second-level indexes were included in these First-level indexes. This index framework has been completed to ensure its suitability for Taiwanese youth through three stages, so this index framework is very suitable for adolescents in Taiwan. It is suggested that future research be used as a research basis, and physical education teachers can use this indicator when teaching life skills.

Past, present and future of sport psychology consultant certification in Taiwan

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ABSTRACT

Background: Sport psychology consultant certification is one of the major promotion mission of the Society of sport and exercise psychology of Taiwan (SSEPT) in recent years. Those certified sport psychology personnel were considered the front line in the sports field to assist athletes, coaches, and sports teams overcome obstacles during and off competition. Therefore, sport psychology consultant could be the core of sport psychology professional development, not only the application of sport psychology-related knowledge but also the delivery of that knowledge to those who in needs to enhance their top sport performance. **Purposes:** This review article was aimed to introduce the certification system of sport psychology consultant in Taiwan, as well as to explore the future challenge regarding international-wise certificate criteria, in that case, are the criteria which suggested by NCCA(National Commission for Certifying Agencies) and ISSP(International Society of Sport Psychology). **Results and discussion:** In the last decade, SSEPT has certified over two hundred sport psychology consultant (under the title of "sport psychology teacher") and the latest one is the sixth generation. Candidates should have physical education, sport sciences or psychology-related BA degree and sport psychology major in MA could qualify to join 120 hours sport psychology courses within 10 weeks time. After qualified of the knowledge-based exam, candidates were asked to do 150 hours of practice on sport psychology consultant service, under supervision. Regarding the training courses, there are 12 essential sport psychology consultant courses carried out by experienced society members. **Future directions and challenges** on the international connection regarding sport psychology consultant education and service improvement were suggested by incorporated with ISSP guidelines and other criteria recommend by NCCA.

KEYWORDS

SSEPT; professional establishment; quality improvement; certification

Effects of teaching games for understanding (tgfu) on primary school students' fitness, emotion and enjoyment: an approach to teaching and learning

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ABSTRACT

Quality learning will prepare students for positive, emotional, and enjoyable experiences. Teachers who integrate teaching and learning (TnL) using the concept of Teaching Games for Understanding (TGfU) are able to transform the TnL into more structured, effective, and engaging sessions. The study aimed to examine the effect of TGfU on primary school students' fitness, emotion, and enjoyment using the TnL concept. A 12 weeks intervention was conducted on 60 primary school students from four different schools. Classes were conducted by selected Physical Education teachers to ascertain differences in physical fitness, emotional well-being, and enjoyment levels before and after the TGfU teaching module intervention. The results indicated that the pre-test group's mean score on the SEGAK test ($M = 14.167$, $SD = 2.451$) was lower than post-test treatment group ($M = 14.868$, $SD = 2.389$), and that the analysis pair sample t-test of physical fitness aspects revealed a significant effect between pre-test and post-test for the treatment group with a value of $t(29) = 3.751$, $p < 0.001$. Constructs associated with emotional achievement for pre-test group ($M = 2.919$, $SD = 0.518$) were higher than post-test group ($M = 2.884$, $SD = 0.310$). The results showed no significant mean score difference with $t(119) = 4.140$, $p = 0.742$. While the enjoyment aspect showed a value ($M = 2.948$, $SD = 0.487$) lower than the post-test of the treatment group ($M = 4.011$, $SD = 0.566$), there was a significant mean score difference on the enjoyment test with a value of $t(29) = -8.580$, $p < 0.001$. The findings indicate that while TGfU can improve students' physical fitness and enjoyment in learning, it has no significant effect on their emotional well-being. The intervention program, delivered through the TGfU-conceptualised teaching module, effectively improved students' physical aspects and enjoyment, while establishing a positive relationship between physical fitness and enjoyment.

KEYWORDS

Teaching Games for Understanding (TGfU); physical fitness; emotional; enjoyment; teaching & learning

Slow-paced breathing: influence of inhalation / exhalation ratio and of respiratory pauses on cardiac vagal activity

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ABSTRACT

During sport competitions, athletes experience a large range of emotions and have to cope with stress, with the need to regulate those emotions and to cope effectively with stressors. Among the strategies addressing athletes' emotional regulation, slow-paced breathing (SPB), the voluntarily slowing down of breathing frequency, has been increasingly used in athletes. However, the influence of certain parameters of SPB on its effectiveness, such as the inhalation/exhalation ratio, and the presence of a resting period between respiratory phases, still need to be understood. Consequently, the current study aimed to further understand the role of these two parameters regarding the influence of SPB on cardiac vagal activity (CVA), an indicator for self-regulation mechanisms. SPB has been shown to enhance the self-regulation abilities of athletes via its influence on CVA. However, the role of certain respiratory parameters (i.e., inhalation/exhalation ratio and presence of a resting period between respiratory phases) still needs to be clarified. The aim of this experiment was to investigate the influence of these respiratory parameters on the effects of SPB on CVA. A total of 64 athletes (27 female; Mage = 22, age range = 18-30 years old) took part in this within-subject design experiment. Within one session, they had to perform six respiratory conditions, with a 5-min washout period between each condition. Results indicated that RMSSD, a marker of CVA, was higher when exhalation was longer. Adopting a respiratory pattern with a longer exhalation phase triggers higher CVA in comparison to respiratory patterns where inhalation lasts longer than exhalation, or when both phases are equal. The presence of a post-inhalation and post-exhalation resting period did not change the results but methodological limitations in our design guarantee further scrutiny of this parameter in the future. Manipulating the autonomic nervous system is often the target of sport psychology techniques, with either activating or relaxing purposes. Within the autonomic nervous system, CVA is a particularly desirable target for athletes, given its role in self-regulation. Even if other methods exist to stimulate the vagus nerve, like transcutaneous vagus nerve stimulation, SPB without biofeedback does not require external devices besides a respiratory pacer, and can be easily implemented as an acute or long-term intervention in athletes becoming a performance habit, with respiratory patterns involving longer exhalation phases in comparison to inhalation in order to trigger the highest changes in CVA.

KEYWORDS

Slow-paced breathing; Inhalation / Exhalation Ratio; Resting Period; Cardiac Vagal Activity

Alcohol Use Disorder (AUD) among professional soccer players in Japan

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ABSTRACT

Introduction: Despite its detrimental impact on their health and performance, a higher prevalence of AUD is reported among athletes in Western countries including Australia, the United States and Ireland than non-athletes. Pre-season timing and male gender are well-known risk factors, while the level of association with other risk factors including level of play, age, and other mental health disorders varies across the studies. While previous research suggested drinking behavior is influenced by cultural background and the data shows the amount of alcohol consumption per capita in male is low in Japan compared to that in western countries, little is known about problematic alcohol consumption among Japanese professional athletes. **Purpose:** This study aimed to (1) determine the prevalence of AUD among male professional soccer players in Japan and (2) explore the association between AUD and age, educational background, past medical history, current injuries, history of severe injuries, and adverse life events. **Methods:** A cross-sectional online anonymous survey was conducted in the 2020 preseason between February and April in Japan. 59 professional soccer players aged twenty or older from four teams participated in the survey. The questionnaire included demographic questions, Alcohol Use Disorder Identification Test-Consumption (AUDIT-C), the Patient Health Questionnaire, Generalised Anxiety Disorder-7, and Social Athletic Readjustment Rating Scale. **Results:** The average age was 26 years old (SD 4.5). The median years of career play in Japan were 6 years (IQR 3 to 10). 10 (16.9%) players were currently injured, and 44 players (74.5%) had experienced severe injuries. The prevalence of AUD, defined as a score AUDIT-C of 4 or more, was 38.9%. Of the participants, 47.8% had experienced binge drinking of 6 or more alcohol units per sitting at least once in the last year and 10.1% had monthly or more episodes. Increased age was associated with AUD ($p < 0.05$), and binge drinking was related to past mental health problems ($p < 0.001$). Other risk factors didn't have significant association with AUD. **Conclusion:** The prevalence of AUD among professional soccer players in Japan was comparable to European studies and higher than the general population of the same age group in Japan. Top athletes need similar mental health care support as the general population. A deeper understanding of risk factors and influential cultural factors are needed to develop effective prevention strategies. Our findings call for further research involving larger cohorts throughout the season and in-depth qualitative inquiry.

KEYWORDS

alcohol use disorder;
professional athletes; Japan;
binge drinking

Conflict competence behavior research among sport stewards

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ABSTRACT

Introduction. Sports stewards make part of many sports clubs around the world. Their main task is to ensure the comfort and safety of fans at sports facilities like stadiums, sports halls, etc. Communication at the stadium is unregulated and superficial. Fans do not always know each other and do not consider the individual characteristics of communication partners. This can provoke a conflict situation. Therefore, stewards need to be competent in conflict management. Purpose of the research: to study the leading strategy of behavior in conflict situations among sports stewards. Methods. The study involved 73 sports stewards (40 women, 33 men). A survey of stewards was conducted in difficult communication situations at the stadium. The strategies of behavior in conflict situations were studied using the questionnaire of K. Thomas adapted by N. Grishina. The questionnaire "The level of subjective control" by E. Bazhin was carried out. The Student's t-test was used. Results. Stewards refer to difficult communication situations as follows: interaction with fans while intoxicated (36%), violation of the rules by the fans (25%), aggressive behavior - insults, provocation, fight (16%). The subjects noted difficulties in communicating with foreign fans (10%), technical and organizational barriers (8%), "limited view from the fan's seat" (5%). To reach a constructive solution to these situations it is necessary to show conflict-competent behavior. Conflict-competent behavior is understood as an attitude to reduce conflict activity and the ability to regulate one's own state and the state of the interlocutor. It was revealed that the leading behavior strategy among sports stewards is a compromise - 42.5%, followed by adaptation - 15.7%, competition - 15%, avoidance - 14.1% and cooperation - 12.7%. For female stewards, the compromise strategy is more pronounced ($p < 0.01$), while for men such is the strategy of avoidance ($p < 0.01$) and competition ($p < 0.05$). The level of subjective control in general among women is higher than among male stewards ($p < 0.05$), which means that the tested women are more likely to take responsibility for events in their lives and professional activities. Conclusion. Compromise is the leading conflict resolution strategy for sports stewards. It allows to follow the rules of the stadium and prevents the aggression of the participants. For sports stewards, internality is characteristic, they are ready to take responsibility in solving difficult situations during sports events.

KEYWORDS

Sports Stewards;
Communication; Fans;
Conflict Situations

Linking coach's personality, athlete developmental maturity, and coaching effectiveness via transformational leadership: a moderated mediation model

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ABSTRACT

Researcher has called to investigate antecedents of transformational coaches and their indirect impacts on athlete outcomes as the importance of leadership roles of coaches in sport settings has been highlighted. We respond to this need and propose coach personality traits as antecedents of coach transformational leadership. In addition, we propose that follower developmental maturation (i.e., age groups of athletes) may moderate the association between coach personality traits and coach transformational leadership. To address the moderating role of follower developmental maturation, we draw on emerging adulthood theory (Arnett, 2000, 2015) and assert that college and high school athletes are different in their mental maturation, which, in turn, yields different perceptions on the associations between coach personality traits and transformational leadership. Therefore, the purpose of the current study is to investigate the joint effects of coach personality traits and athlete developmental maturation on coach transformational leadership and athlete cohesion perceptions and satisfaction. We recruited 498 coach-athlete dyads in Division I and II competitive high school and college basketball teams. Results revealed coaches' extraversion and agreeableness indirectly impact athletes' cohesion and satisfaction via transformational leadership. Specifically, the conditional indirect effect of extraversion through transformational leadership was positive for college athletes, whereas the conditional indirect effects of agreeableness through transformational leadership was positive for high school athletes. Our results reveal that extraversion coach is fit to college athlete, and then make athlete perceive their coach as transformational coach and athlete cohesion perceptions and satisfaction. On the contrary, agreeable coach is fit to high school coach, and then make athlete perceive their coach as transformational coach and athlete cohesion perceptions and satisfaction. Implications for research and practice are discussed.

KEYWORDS

coach-athlete relationship; developmental maturation; emerging adulthood theory; sport team

Revising Automatic Self-Talk Questionnaire for Sports (ASTQS): preliminary results

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ABSTRACT

Although ASTQS (Zourbanos et al., 2009) has been proved a comprehensive, psychometrically valid and reliable measure of athletes' automatic self-talk, recently after the introduction of new classifications of athletes' automatic self-talk (e.g., spontaneous and goal-directed self-talk), its refinement has been suggested (Karamitrou et al., 2020), so as it will also include the assessment of recent self-talk classifications, and it will become

KEYWORDS

inner speech; scale development; athletes; spontaneous self-talk; goal-directed self-talk

from a trait, a state measure of athletes' automatic self-talk. Thus, the purpose of this study was to develop a state measure of athletes' self-talk, based on the contemporary conceptual framework of automatic self-talk in sport (Latinjak et al., 2019) that distinguishes between spontaneous and goal-directed self-talk. Participants were 513 athletes (319 males and 194 females; Mage = 18.93, ± 6.38 years) from a variety of team and individual sports. Athletes filled out, immediately after the completion of their competition (n = 259) or their training (n = 254), two open-format inner speech forms asking them to write down their self-talk that they had during this last training or competition respectively, in generally, and in a variety of emotional situations (e.g., sadness, anger, anxiety) that may experienced during these events. Content analyses were performed according to the data categorization procedures used by Latinjak et al. (2014). Based on the Latinjak conceptual framework of automatic self-talk and the results of content analyses, we developed a 60-item scale that includes 12 subscales (five items per subscale) assessing four dimensions of athletes' spontaneous self-talk and eight dimensions of athletes' goal directed self-talk. The spontaneous self-talk subscales/dimensions are: 1) retrospective positive self-talk (e.g., I have achieved it), 2) anticipatory positive self-talk (e.g., I will succeed), 3) retrospective negative self-talk (e.g., I have failed), and 4) anticipatory negative self-talk (e.g., I want to stop). The goal-directed self-talk subscales/dimensions are: 1) dealing with cognitive reactions self-talk (e.g., It doesn't matter. Nobody is perfect), 2) controlling activated states self-talk (e.g., Do not be anxious), 3) controlling deactivated states self-talk (e.g., Do not give up), 4) creating deactivated states self-talk (e.g., Calm down), 5) creating activated states self-talk (e.g., Let's go), 6) regulating concentration self-talk (e.g., Concentrate), 7) up-regulating self-confidence self-talk (e.g., You can achieve it), and 8) promoting mastery/performance approach goals and intrinsic motivation self-talk (e.g., My goal is to perform well). Responses in the scale are given on a 5-point scale (0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = very often).

The influence of Japanese female athletes' drive for thinness and body satisfaction on abnormal eating behavior

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ABSTRACT

Female athletes are susceptible to low energy levels, hypothalamic amenorrhea, osteoporosis, and a constellation of clinical conditions defined as the female athlete triad (FAT) by the American College of Sports Medicine. There is a continuum model for understanding disordered eating ranging from abnormal eating behaviors to clinical eating disorders, which are believed to play a role in amenorrhea or menstrual dysfunction experienced by many athletes. Furthermore, low energy availability without eating

KEYWORDS

Female Athletes; drive for thinness; inappropriate diet behavior; apprehension concerning food intake; binge eating

disorders or even disordered eating may account for many cases of amenorrhea in athletes. An inadequate caloric intake and a decrease in endogenous estrogen eventually result in an imbalance in bone remodeling, often leading to low bone mass or osteoporosis. Although any one of these problems can occur in isolation, inadequate nutrition for a woman's given level of physical activity often begins a cycle in which all three occur in sequence. This study aims to investigate the influence of Japanese female athletes' drive for thinness and body satisfaction on abnormal eating behavior. Participants in the study consisted of 236 Japanese female athletes (mean age = 29.01, SD = 5.85) who completed a set of questionnaires, which included items on their demographic variables: the abnormal eating behavior scale–new version, the drive for thinness scale, and the degree of satisfaction with one's physique. Multiple regression analysis was performed to investigate the influence that Japanese female athletes' drive for thinness and body satisfaction had on abnormal eating behavior. The results showed that the "Drive for thinness" was positively associated with "Inappropriate diet behavior ($\beta = .580$, $p < 0.001$)," "Apprehension concerning food intake ($\beta = .662$, $p < 0.001$)," and "Binge eating ($\beta = .593$, $p < 0.001$)" on an abnormal eating behavior scale. These results mean that a strong desire to lose weight and a motive for dieting could lead to a risk of causing abnormal eating behavior. Female athletes at the greatest risk for disordered eating are: (a) those individuals who restrict energy intake either to lose weight or maintain a low body weight, (b) those who increase exercise energy expenditure through increased hours of training, and (c) those who increase exercise intensity without increasing energy intake. Future research should survey the differences in the risk of abnormal eating behavior depending on whether the sport requires weight loss or stipulates body shape.

In what context does performance anxiety originate in novice ski learners and how is it dealt with?

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ABSTRACT

[Introduction] Athletes' performance anxiety has become a significant issue as it gravely impacts general performance, as well as learning performance activities. Therefore, it is important to analyze the context in which novice learners experience anxiety and the measures they take. This study aimed at illustrating and analyzing novice ski learners' experience of performance anxiety by using the context in which the anxiety originates. **[Methods]** Twelve university students who participated in a ski intensive course were recruited for this study. We conducted formal and informal, in-depth, semi-structured,

KEYWORDS

performance anxiety; novice ski learners; metacognition; daily introspection reports; informal interviews

and open-ended interviews by focusing on the different contexts in which they experienced performance anxiety during ski lessons. Additionally, the daily introspection reports of participants were used to understand their learning process. Using the qualitative data analysis method, tags were assigned to the textualized interview data for analysis. As a result, 47 meaning units were analyzed for this study. **【Results and discussion】** The 47 meaning units were consolidated into higher order concepts by considering the contexts in which the data was obtained. As a result, they were grouped into seven subcategories. These were integrated into broader categories, with higher ambiguity. Ultimately, they were divided into three categories, namely, I know I can't, I know I'm trying to do it, and I know how it works. The 'I know I can't' category comprises the subcategories of overall picture of movement and result prediction; it explains formative anxiety factors directly involved with performance and its coping behaviors. The 'I know I'm trying to do it' category explains the anxiety factor formed by evaluating one's present performance and one's intended performance. This category is constructed from the two subcategories of awareness of intention and motion recognition. The 'I know how it works' category is constructed from the two subcategories of the perception of the theoretical understanding of movement and motion prediction. It is a category that explains the anxiety generated from the situational control, formed as a result of subjectively perceiving the situation surrounding oneself (the performer). **【Conclusion】** The performance anxiety of novice ski learners can be constructed from the three factors of 'I know I can't,' 'I know I'm trying to do it,' and 'I know how it works.' This study clarified that the coping mechanism for performance anxiety experiences is operated in a manner that links itself to the performer's cognitive style and their identity concerning metacognition.

Analyzing a kendo master's psychological bargaining through the stimulated recall method

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ABSTRACT

Introduction. Kendo is a Japanese martial art in which psychological bargaining plays a big role in the outcome of a match. In fact, psychological bargaining accounts for most of the offensive and defensive moves in the sport, and the more proficient the athlete, the greater the role of bargaining. In this study, psychological bargaining is operationally defined as "developing a match in your favor by doing something that is disadvantageous to your opponent" (Suyama et al. 2017). Previous research on psychological bargaining has focused on bargaining in sports matches and tactical bargaining in computer games. There is limited research on psychological bargaining as it relates to

KEYWORDS

reading; offensive and defensive tactics; qualitative research; martial arts; psychological bargaining

movement intentions and situational judgments during a match. Purpose. The study aims to clarify how psychological bargaining works in a match between kendo masters and how they integrate their physical movements with psychological tactics. Methods. The subject of this case study is a kendo eighth-stage master who has won several Japanese Kendo Championships and is a respected teacher. Data were collected through two-to-one semi-structured, open-ended, in-depth interviews. The stimulated recall method was used, in which the subject watched a video of one of his past matches and talked through what he saw, thought, and intended to do in key scenes. Detailed information on operational intention was collected, and an operational diagram was generated. The data were analyzed using Cote's (1997) qualitative analysis method. Results and discussion. The analysis indicated six subcategories of kendo master psychological bargaining: fool, pretend to be fooled, break the movement, trap the opponent to attack, read first, and swing the sword after paving the way to win. These were grouped into three categories: break the readiness of fight, block the opponent's desired movements and skills, and use skills in a winning context. These three categories cover the range of psychological and technical offensive and defensive tactics. read the opponent, let the opponent read and deceive, block opponents' movements and skills, and use skills in a winning context. Conclusion. The psychological bargaining used by kendo masters comprises a series of flows that presuppose reading, directing the flow of movement between the opponent and oneself, constructing the context of the attack, and finally, the attack itself.

Coaching ladder from a graduated hierarchical system for developing practical coaching ability

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ABSTRACT

【Introduction】 It is important to transform coaches' experience into wisdom through reflection of their daily coaching practice, rather than simply accumulating their years of experience. Coaches' growth experience is reflective in the sense that it is perceived for the first time when they look back, and demands the accumulation of and reflection on daily experiences and their transformation into "experience" useful for growth. **【Purpose】** The present study aimed to establish a coaching ladder from a graduated, hierarchical system for developing practical coaching ability that can be applied to real-life coaching setting, focusing on practical coaching skills as abilities that expert sports coaches have in common. The study also elucidated the process of coaching mastery through which such experts grow as sports coaches by retrospectively tracing their coaching experiences. The present study addressed two research questions: "What does the practical coaching skill of talented athletic coaches

KEYWORDS

coaches' growth; practical coaching ability; qualitative research; coaching ladder

comprise?” and “How is such excellence learned and developed?”

【Methods】 Eighteen expert coaches (swimming, soccer, rowing, track and field, gymnastics, ice skating, basketball, softball, bobsleigh, and table tennis) were selected as survey respondents. Researchers with at least 10 years’ experience in qualitative research methodology conducted a face to face, in-depth, open-ended, semi-structured interview with each participant, which lasted for approximately 60–90 minutes. All interviews were recorded on digital voice recorders after obtaining the participants’ consent. Interviews were immediately transcribed and integrated into hierarchical categories based on qualitative analytical methods. **【Results and discussion】** Interview data obtained from eighteen participants yielded 287 meaning units, which were ultimately divided into 3 categories: expansion from a player’s perspective to a coaches’ perspective, building relationships as a precondition for coaching, and development of practical knowledge in pursuit of essence. The three categories are positioned as foundations of coaching excellence, as they influence coaching practice in stages; learning attitudes are structured for each stage of excellence and practical knowledge is restructured repetitively in accordance with shifting perspectives. **【Conclusion】** The experience of acquiring mastery reveals a structure in which coaches grow increasingly aware of the challenges that surround them and their athletes, the growth of coaches and athletes is promoted, and athletes and coaches attain excellence as they continue to learn.

The effect of self-compassion on resilience and mental toughness: a case study amongst Japanese elites female martial arts collegiate athletes.

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ABSTRACT

With unprecedented Covid-19 spreading across the world, many of the athletes faced the cancelation of the important sports events and practices. Athletes were required to be more psychologically strong with the unforeseen situation and there was a necessity to increase mental strength. This case study investigated the effect of self-compassion intervention on resilience and mental toughness for athletes. 6 elites Japanese female martial art collegiate athletes participated in this case study. 1 hour of online self-compassion intervention was conducted for 8 weeks during the state of emergency in Japan. Self-compassion intervention was based on The Mindful Self-Compassion Program (Germer & Neff, 2019) with customization to include athlete-specific aspects such as focusing on the breathing, mind before the game, and explanation of stress. Additionally, the length of the intervention was shortened to modify for online to meet the requirement under the state of emergency. Before and after the intervention,

KEYWORDS

self-compassion; resilience; mental toughness; case study; intervention

The Self-Compassion Scale Athlete Version (Killham, Mosweich, Mack, Gunnell, & Ferguson, 2018), The Connor Davidson Resilience Scales (Connor & Davidson, 2003), and Sports Mental Toughness Questionnaire (Sheard, Golby & Van Wersche, 2009) were conducted. The Wilcoxon Signed-Rank Test was utilized to see the difference before and after the intervention. The Self-Compassion Scale athlete version after-intervention, $Mdn = 3.03$, was a statistically significantly higher than before-intervention, $Mdn = 2.65$, $Z = -2.20$, $p = .028$. The Connor-Davidson Resilience Scale after-intervention, $Mdn = 3.18$, was a statistically significantly higher than before-intervention, $Mdn = 2.98$, $Z = -2.20$, $p = .027$. However, Sports Mental Toughness Questionnaire, after-intervention, $Mdn = 2.47$, did not indicate statistically higher difference before-intervention, $Mdn = 2.33$, $Z = -1.47$, $p = .141$. After the self-compassion intervention for 8 weeks, all participants reported that they became more self-compassionate and they were able to look into their emotions more than before. Additionally, the participants recognized the importance of breathing and wished to continue focusing on breathing in the future. A participant stated that breathing had helped her motivate during the cancellations of sports event because of Covid-19. This case study suggests self-compassion intervention with modification for online with athlete-specific topics had a positive effect on self-compassion. Additionally, this study highlights that self-compassion intervention could be the method to increase resilience for athletes. However, future studies should be conducted with more participants to see the relationships with self-compassion, resilience, and mental toughness.

The structure of pride in sport: what are emotional experiences of pride for athletes?

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ABSTRACT

Pride is an important emotion that promotes achievement behaviors for performance success. The structure of pride is two facets, authentic pride and hubristic pride (Tracy and Robins, 2007). However, it is difficult to assess hubristic pride (Gilchrist et al., 2018) because it may include humility (Holbrook & Fessler, 2014). Here, focusing on athletes' emotional episode, we developed a scale to measure the emotional experiences of pride in sports (Emotional Experiences of Pride Scale for Athletes: EEP SA), and examine the characteristics. This research consisted two studies, (1) to refine the scale (Kondo and Tsuchiya, 2019), and (2) to examine the relationship between the EEP SA and personality as with the previous research. In Study 1, in order to gather the words that are semantically related to pride, interviews were advanced 16 university student-athletes on the emotional experience of pride in sports. Then university student-

KEYWORDS

positive emotions; gratitude; sport

athletes (N = 514) completed how they would feel among 58 items of the pride-related words. Participants were instructed to try to imagine the feeling they would have if they had this experience, after read assigned randomly eight different scenarios describing pride experiences in sports. The exploratory factor analysis of the EEPISA items indicated a four-factor structure: (a) Elation, (b) Appreciation, (c) Satisfaction, and (d) Superiority. Internal consistency was verified by Cronbach's alpha and supported the reliability ($\alpha = .87-.92$). There was gender difference in the EEPISA, male athletes experienced more pride ($t(484) = 3.24, p < .001, d = .31$). In Study 2, university student-athletes (N = 91) completed the EEPISA and other scales of important personality constructs included self-esteem, authenticity, narcissism and the Big Five. As predicted, the overall mean EEPISA scores were positively correlated with narcissism ($r = .51, p < .01$) and authenticity ($r = .51, p < .01$), confirming convergent validity. Specifically, narcissism had a slightly stronger positive correlation with all subscales of the EEPISA ($r = .41-.53, ps < .01$), and authenticity had a moderate positive correlation with Elation and Appreciation ($r = .31-.33, ps < .01$). These findings suggest that emotional experiences of pride are multidimensional for athletes, and that the affective core is authenticity and narcissism following the previous study. Especially, appreciate feeling is a new finding in the structure of pride experiences. Appreciation of the EEPISA measures the experience of pride as the sense of self-affirmation evoked through support from and collaboration with others, that is a semantic aspect of gratitude. The EEPISA may provide elaborate insight into individual differences of behavioral tendencies effected athletes' performance.

Leadership power perceptions of soccer coaches in relation to grit, coach-athlete relationship, vengeance, individual and performance variables

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ABSTRACT

The exact nature of the relationship between leadership power perceptions of soccer coaches in relation to grit, coach-athlete relationship, vengeance, individual and performance variables are still uncovered. Therefore, purpose of the present study concentrates on this research gap. Data were collected from 171 male soccer coaches aged 21 to 61 ($M = 37.18 \pm 10.79$ and Mean Experience = 8.20 ± 6.73 yrs.) administered validated Instructor Sport Leadership Power Scale-ISLPS-19 (Konter, 2015), The Short Grid Scale-SGS (Akın & Arıcı, 2015), Coach-Athlete Relationship Scale-CARS (Altıntaş, Kazak & Aşçı, 2012), and Vengeance Scale-VS (Satıcı, Can & Akın, 2015) scales with the personal information form. ISLPS-19 consists of 5 subscales; Expert Power-EP, Legitimate Power-LP, Coercive Power-CP, Referent Power-RP and

KEYWORDS

Instructor Sport Leadership Power; Grid; Coach-Athlete Relationship; Vengeance; Soccer Performance

Reward Power-RWP. SGS has two factors including Consistency in Interest-CI and Persistence in Effort-PE. CARS contains three factors; Closeness, Commitment and Complementarity. Collected data was analyzed by normality tests, spearman correlations, Kruskal-Wallis and Mann-Whitney U tests. Results indicated that; 1) There is negative low and significant correlation between LP and age of coaches ($r = -.205, p < .007$). 2) Soccer coaches with no professional team coaching experience have higher scores of LP than soccer coaches with professional team coaching experience ($p < .085$). 3) There is negative low and significant correlation between EP and coaches' punishment frequency ($r = -.170, p < .032$). 4) There are negative low and significant correlations between RWP and diploma level of coaches ($r = -.202, p < .010$). 5) Coaches with the experience of first three achievements have higher points of LP ($p < .027$), CP ($p < .068$) and ISLPS Total ($p < .027$) than coaches with no experience of the first three achievement. 6-There is positive low and significant correlations between ISLPS and SGS ($r = .184, p < .016$), and CARS ($r = .160, p < .037$). 7-There are positive, low and significant correlations between EP, RP, RWP and Closeness, Commitment, Complementarity and CARS Total (correlations range between .224 and .315, $p < .05$). 8-There is positive low and significant correlations between EP, RP, RWP ISLPS-19 Total and PE (correlations range between .191 and .260, $p < .05$). 9-There is positive low and significant correlations between LP, CP and CI ($r = .302, p < .001$ and $r = .237, p < .002$ respectively). 10-There is negative low and significant correlations between RP, RWP and CI ($r = -.209, p < .006$ and $r = -.177, p < .020$ respectively). 11-There is positive low and significant correlations between LP, CP and VS ($r = .246, p < .001$ and $r = .246, p < .001$ respectively). Overall, coach leadership powers seem to be important related to indicated scales, individual and performance variables. Research is needed for conclusive results.

Children sport courage in relation to anger and selected individual, sport, and success variables

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ABSTRACT

There is almost no research to understand the relationship between children sport courage and anger. Therefore, purpose of this study was to research children sport courage in relation to anger considering a number of selected individual (gender, age, body mass index-IBM, formal education, and dominant limb), sport (three times a week sport participation and sport participation before the age of ten), and success (Physical Education Grade Point Average-PE-GPA, and general great point average-GPA) variables. Data were collected from 394 various sport participant children aged 10 to 12 ($M = 11.39 \pm .68$ yrs; 182 male, 192 female). Participants administered the Revised Sport Courage Scale for

KEYWORDS

Sport Courage; Anger; Sport Participation; Children; Success

Children-28/RSCS-28 for Children (Konter, Johan & Bayansalduz, 2013) and the Anger Rating Scale-AARS (Aslan & Sevinçler-Togan, 2009) with the personal information form. RSCS-28 for Children comprises five factors (Mastery-MT, Determination-DT, Assertiveness-AT, Venturesome-VS and Self-Sacrifice Behavior-SB) and AARS consists of three factors (Instrumental Anger-IA, Reactive Anger-RA, and Anger Control-AC). Collected data was analyzed by normality tests, correlations, various parametric and non-parametric tests and regression. Results indicated that; 1-MT has significantly positive low correlation with AC ($r = .216, p < .001$). 2-DT has significantly positive low correlation with RA ($r = .10, p < .047$), AC ($r = .156, p < .002$) and Anger Total (ATOT = IA + RA, $r = .10, p < .047$). 3-AT has significantly positive low correlation with IA ($r = .134, p < .008$), RA ($r = .107, p < .034$) and ATOT ($r = .124, p < .014$). 4-VS has significantly positive low correlation with IA ($r = .213, p < .001$), RA ($r = .234, p < .001$) and ATOT ($r = .241, p < .001$). 5-SB has significantly positive low correlation with IA ($r = .134, p < .008$), RA ($r = .187, p < .001$) and ATOT ($r = .179, p < .001$). 6-RSCS-28 Total has significantly positive low correlation with IA ($r = .157, p < .002$), RA ($r = .130, p < .020$), AC ($r = .153, p < .002$) and ATOT ($r = .148, p < .003$). In addition, RSCS-28 for Children related to indicated independent variables revealed that; 1-VS has significantly positive low correlation with PE-GPA ($r = .137, p < .007$) and GPA ($r = .121, p < .018$). 2-RSCS-28 for Children has significantly positive low correlation with BMI ($r = -.123, p < .019$), PE-GPA ($r = .236, p < .001$) and GPA ($r = .250, p < .001$). 3-Males have significantly higher points of MT ($p < .057$), DT ($p < .035$), VS ($p < .001$), SB ($p < .032$) and RSCS-28 for Children ($p < .002$) than females. 4-Males have significantly higher points of IA ($p < .001$), RA ($p < .054$) and ATOT ($p < .004$) than females. In general, participants with high points of courage factors have significantly higher points of AARS. However, correlations are quite low. More research is needed to have more conclusive results.

Sport courage and performance: proactive personality, persistence, achievement orientation, game preferences, and sport participation

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ABSTRACT

Understanding the relationship between sport courage and performance including proactive personality, persistence, achievement orientation, game preferences and sport participation are still unknown. Therefore, purpose of this study focus on this research gap. For this reason,

data were collected from 230 sport participants (Male = 97 and Female = 132) aged 19 to 41 (Mage = 22.50 ± 3.98) administered validated Sport Courage Scale-SCS-31 (Konter & Ng, 2012), Proactive Personality Scale-PPS (Akin & Arici, 2015), Short Form of

KEYWORDS

Sport Courage; Proactive Personality; Achievement Orientation Persistence; Game Preference and Sport Participation; Sport Performance

Persistence Scale-SPS (Akin & Arici, 2015) and 2X2 Achievement Orientation Scale-AOS (Akin, 2006) with the personal information form. SCS-31 consists of five subscales; Mastery-MT, Determination-DT, Assertiveness-AT, Venturesome-VS and Sacrifice Behavior-SB. AOS has factors comprising the Learning Approach-LAP, Learning Avoidance-LAV, Performance Approach-PAP and Performance Avoidance-PAV. PS and SPS are unidimensional scales.

Collected data was analyzed by normality tests, correlations, Multivariate Analyses, Kruskal-Wallis and Mann-Whitney U tests. Analyses indicated that: 1-Males have significantly higher scores of MT, DT, AT, VS, SB and SCS-31 Total than females ($p < .05$). 2-Sport participants 3 times a week and school sport team participants have significantly higher points of MT, DT, AT, VS, SB, Total SCS-31, PPS and SPS than none-sport participants 3 times a week and non-school sport team participants ($p < .05$). 3-MT, DT, AT, VS, SB and SCS-31 Total are significantly negative low correlations with PAV (correlations ranging between $-.143$ and $-.382$, $p < .05$). 4-VS and SCS-31 are significantly negative low correlations with LAV (VS: $r = -.150$, $p < .023$ and SCS-31: $r = -.148$, $p < .005$). 5-MT is significantly negative low correlations with PAP ($r = -.162$, $p < .014$). 6-Participants with the game preference of individually competitive means-competitive ends and collective means-competitive ends have significantly higher points of MT, DT, AT, VS, SB, SCS-31, PPS, LAV, PAP (except collective means-competitive ends) and SPS than participants with the game preference of cooperative means and cooperative ends ($p < .05$). 7-Participants with the game preference of individually competitive means-competitive ends and cooperative means-cooperative ends have significantly higher points of PAV than participants with the cooperative means-competitive ends ($p < .05$). 8-Participants with the preference of competitive games have significantly higher points of MT, DT, VS, SCS-31, PAV and SPS than participants with the preference of chance games, imitation games and thrill/adventure games ($p < .05$). Results indicated that sport courage factors are important with the indicated variables above. More research is needed with different independent variables and different research methods. However, sport courage education could be important related to performance, participation and success enhancement.

The relationship between trait gratitude and favorable attitude toward corporal punishment in extracurricular school sports settings

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ABSTRACT

Many studies on corporal punishment in the setting of extracurricular school sports activities have shown that those had experienced corporal punishment tended to be more accepting of corporal punishment than those who had not (Ae, 2000;

KEYWORDS

Gratitude; Corporal Punishment; Positive Interpretation

Takahashi and Kumeda, 2008; Uchida et al., 2020). However, we are unaware of the mechanism by which the person with experience of corporal punishment accepts corporal punishment (Uchida et al., 2020). By clarifying the mechanism, we can provide society the necessary knowledge to break the cycle of violence (Ae, 2000) in which those who have experienced corporal punishment become practitioners of corporal punishment, and the practice is passed on from one generation to another. In the present study, we focused on gratitude in order to examine the psychological mechanisms. Individuals with high trait gratitude tend to view events that happen to them positively (Lambert et al., 2009; Lambert et al., 2012; Watkins et al., 2015). Moreover, it has been suggested that people who interpret their own experiences of corporal punishment in a positive light are more likely to accept the corporal punishment (Asahi Shimbun, 2006). Therefore, it is possible that individuals who have experienced corporal punishment in the setting of extracurricular school sports activities with high trait gratitude will interpret the experience of corporal punishment positively and consequently adopt favorable attitudes toward corporal punishment. Therefore, the purpose of this study was to examine a model in which the favorable attitudes toward corporal punishment among those who have experienced corporal punishment are related to trait gratitude, and this relationship is mediated by a positive interpretation of the experience of corporal punishment. Japanese adults aged 20 and older who had experienced corporal punishment were asked to complete a survey through an online survey company. A total of 271 participants were included in the analysis. A mediation analysis was conducted using the PROCESS macro for SPSS (Hayes, 2013). The independent variable was the trait gratitude; the dependent variable was the favorable attitude toward corporal punishment; and the mediating variable was the positive interpretation of the corporal punishment experience. The results showed that the indirect effect was significant and the direct effect was not significant. The results suggest that individuals with higher levels of trait gratitude have more positive interpretations of their own experiences of corporal punishment and form more favorable attitudes toward corporal punishment.

Social support from coaches and emotions of injured athletes: the moderating effect of trust in coaches

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ABSTRACT

Interduction: sports injury to each athletes, they are the least willing to face it in their sports career, but they often do not a problem that they could avoids. Purpose: the research was to investigate the moderating effect of trust in coaches on the relationship between social supports from coaches and emotions of injured athletes. It was hypothesized that injured athletes' perception of social

KEYWORDS

social support; trust; emotion

supports from coaches would result in more positive but less negative emotional experiences, especially when the athletes trusted their coaches more. Methods: the participants of the research consisted of 71 athletes (41 males and 30 females, with an average age of 20.2 years and a standard deviation of 1.30 years) who had suffered from sports injuries within a year and had to spend more than one week to recover. Two separate hierarchical multi-regression analyses were conducted. Results: the dependent variables were positive emotion and negative emotion. Social supports were put in the equation first (4 kinds of social supports, including emotion, self-esteem, information, and substantial support); trust in coaches was put in at the second stage, and the products of social supports and trust scores were put in at the final stage. The results of the analyses did not support the hypothesis, no significant interactions were found. A main effect of substantial support on positive emotions was found, however. Injured athletes perceived more substantial social support from their coaches experienced positive emotions more often. Conclusion: this data suggests that coaches should provide more substantial social supports to injured athletes to enhance athletes' psychological well-being. In addition, the possible interactional effects between perceived social supports from coaches and trust in coaches on injured athletes' emotions warrant further examination.

The influence of tug of war coach's leadership behavior on junior high school players satisfaction: mediated by team cohesion.

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ABSTRACT

The tug of war has been popular in Taiwan for a long time. Taiwan won the right to host the 2026 World Cup indoor tug of war championship recently. It shows that our government support for tug of war. Tug of war is a group sport, each role has different characteristics. It needs cooperation and teamwork to complete a wonderful competition. Coach's leadership behavior will deeply impact the team cohesion among players and the satisfaction of players in the process of training. It shows that team cohesion plays an important role. The aims of this study were to explore the relationships among team cohesion, perceived leadership behavior and satisfaction of tug of war team. This study recruited athletes by purposive sampling in the 2021 National Zhongzheng Cup indoor tug of war championships. The participants were 82 male, 87 female players whose average age of 13.92 ± 0.87 years old in junior high school. The measurements included demographic variable, personal data, Leadership Scale for Sport, Group Environment Questionnaire scale and athletes' satisfaction scale. The data analysis used descriptive statistics, T-test, one-way

KEYWORDS

Zhongzheng cup; indoor; team sports; training and guidance; leadership style

ANOVA, Pearson correlation and hierarchical regression. The results find: 1. There are significant differences among age groups, team seniority and frequency of weekly training of players on team cohesion, coach leadership behavior and player satisfaction. 2. There are significant correlation among team cohesion, coach leadership behavior and player satisfaction. 3. Hierarchical regression analysis was used and after control background variable included age, team seniority, frequency of weekly training to find the team cohesion (task cohesion and society cohesion respectively) partial mediate the relationship between coach leadership behavior (training and guidance) and player satisfaction. The study finds that the players with higher grades, more years of participating tug of war and more frequent training get along with their coaches and peers much time, and lead to improve their satisfaction and team cohesion with their team. We find that coaches leadership behavior, team cohesion have a great impact on player's satisfaction. It shows that coach's training and guidance behavior will improve team cohesion and then impact athlete satisfaction of tug of war team. When all team members feeling of "we together", their psychological affect for tug of war will increase. Coach play a critical role in this team factors interactive process. Therefore, in order to raise adolescent players' well-being and motivation, coaches should adapt their leadership behavior and learn how to build team cohesion.

Relationship between doping and moral disengagement: a systematic review

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ABSTRACT

In high-performance sport, the relationship between moral disengagement and doping has been investigated in an attempt to understand the psychological aspects involved in the use of prohibited substances. Moral disengagement can be defined as justifications for carrying out antisocial actions without guilt or censorship for these acts, that is, it is possible to disengage moral standards to commit antisocial actions without self-condemnation. This concept is defined through the studies of Albert Bandura (1991) and the Social Cognitive Theory, where the eight mechanisms of moral disengagement were developed: moral justification, advantageous comparison, euphemistic language, minimization, ignorance or distortion of consequences, dehumanization, attribution of guilt and displacement of responsibility and diffusion of responsibility. Doping is the name for the use of prohibited substances or methods, capable of promoting physical and/or psychic alterations that artificially

KEYWORDS

sport high performance; competitive sport; cheating; unfair advantage; social psychology

improve the athlete's sporting performance. The present study aimed to systematically identify the articles that show the referred relationship. The method used was the Preferred Reporting Items for Systematic Reviews and Meta-Analyses - PRISMA. The academic bases consulted were: Science Direct, PubMed and Wiley, in the month of May 2021, using the following descriptors: (doping and ("moral disengagement"). The research recovered a total of 70 studies, 1 of which was a duplicate study. 69 studies, 56 were excluded by the eligibility criteria. The inclusion criteria were: studies with a central theme related to doping and moral disengagement, studies with high-performance sports, studies from the last 5 years (2017-2021), studies with quantitative bias and studies with free and online access in full. The studies were evaluated by 3 judges regarding the inclusion and exclusion criteria, being considered, unanimously, 13 eligible studies within the criteria established in this review. The results showed that the athletes' values, motivational climate and social environment are directly and indirectly related to the probable use of prohibited substances to optimize performance. It is noteworthy that the evidence points to a doping model based on the Social Cognitive Theory, in which self-regulatory effectiveness is related to the probability of using prohibited substances that improve performance through moral disengagement.

The self-talk of tennis players on different level college teams

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ABSTRACT

Introduction: In recent years, Taiwanese tennis players has well performed in the Universiade, and the players' psychological performance has also attracted attention to researcher. Based on the experience of the researcher's on tennis athletes' backgrounds, in addition to looking at the win and lose of the game, the players was found that the players often have self-talking behaviors and performances at the end of each point, near the game point, at the end of the game, or after make a mistake. The past research founded when more frequently the athlete performs self-talk, the stronger the self-efficacy will also affect its skill performance (Deng, Jhang, & Hong, 2018). The purpose of this study was tried to understand the content and course of self-talk of the tennis players of the college A and B groups in the game. Method: 3 players from Group A (3 males) and 3 players from Group B (2 males and 1 female) as participants. Through interviews after the game to understand how tennis players used self-talk. Result: It was found that in addition to the four dimensions of positive, negative, instruct and motivation in the original self-talk of sports psychology, according the interview the process of self-talk can also find four new ones include character, emotions, values, and criticism.

KEYWORDS

character; emotions; values; criticism

Secondly, during the interview, it was found that the players in Group A won't take win or lose too seriously in the key matches, instead they paid more attention to the process and enjoying the game. It was also found that when the players in Group A face turbulence and unstable emotion, in addition to using self-talk, they will also use some behaviors to calm themselves. In the future, we suggesting can do in-dimensions research to provide players with more accurate psychological science.

The relationship between enjoyment, sport commitment, leisure satisfaction on street dance participants

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ABSTRACT

The purpose of this study was to examine the relationship between enjoyment, sport commitment, leisure satisfaction on street dance participants, to promote physical activities of the public, to improve the quality of life, and to further introduce new areas of physical activity to overcome COVID-19 circumstances. Street dance activity is unique in a sense because this is a type of dance activity mainly enjoyed by adolescents and young public without any competitive aspects of sport activity. However, the one of the main goal of the participation is the expression of self and personal achievement unlike the typical physical activities seeking health promotion. Because most previous studies concerning enjoyment, commitment and satisfaction typically focused on the sport or leisure activity participation, studies on the activities like street dance may provide interesting perspectives on current understandings of physical activity participation. The questionnaire used in this study consisted of 18 questions of enjoyment, 12 questions of sport commitment, and 24 questions of leisure satisfaction. For data analysis, frequency analysis, exploratory factor analysis, reliability analysis, correlation analysis, and multiple regression analysis were performed with SPSS version 23.0. In conclusion, this study shows that the factors of enjoyment, sport commitment and leisure satisfaction affect each other, and the person who participates in street dance recognizes street dance as a physical activity that gives a positive physical and mental advantage. Also they immersed in the activity itself, thereby achieving the satisfaction of leisure life that can improve the quality of life. Through this study, the public could recognize the street dance as a part of physical activity and contributing to the expansion of the base of street dance, it will eventually be another channel to overcome this COVID-19 circumstances.

KEYWORDS

street dance; enjoyment; sport commitment; leisure satisfaction

Effects of sub-concussion on eye movements and cognitive processing abilities

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ABSTRACT

While the consequences of concussion in sports settings have been extensively studied for the last 20 years, dangers of sub-concussion were not fully recognized until recently. In fact, the term sub-concussion has not been fully established yet. Unlike the mild traumatic brain injury (mTBI) or concussion, athletes and coaches often do not experience or report any immediate problems associated with sub-concussion. Thus, problems associated with sub-concussion may escalate with frequent and repeated exposures. A few existing studies used the effects of headers among soccer players on the scores from various cognitive tests, and reported contradicting results. Because researchers cannot control the occurrence of the headers in soccer games, identifying the controlled effects of sub-concussion was not feasible in those studies. Therefore, in this study, we have investigated the effects of sub-concussion among Kendo players. During their routine practice, Kendo players experience about 100 head-hits (the effect of each hit is equivalent to a soccer header). Thus, by examining the eye-movement and cognitive tests performances, we were able to identify the effects of sub-concussions accumulated over a long period (10 years), and right after the practice. The results showed that, when compared to the non-players (long term effects), Kendo players showed significantly lower stroop test results while there was no difference in convergence and smooth pursuit eye movement performances. There was a significant decrease of convergence eye movements when pre/post Kendo practice comparison was made (short-term effects). In addition, after Kendo practice, players showed increased attention-shift test scores. These results suggest that Kendo players may experience a short-term eye-movement problems due to sub-concussion after routine practice. While this problem in eye movement may be temporary, accumulated exposure to such hits may lead to chronic cognitive deficiency. Additionally, the acute increase in selective attention performance after practice contradicts our hypothesis. One of the possibilities for such results could be consequence of intense exercise effects. But, additional data collection from the players without head-hits during the practice discarded such interpretation. Thus, we have suggested the possibility of physiological awakening induced by repeated head impacts. Overall, the results from this study suggests the negative consequences of repeated sub-concussion experienced during many sport activities, and asks for alternative training procedures or modification of protective gears.

KEYWORDS

Sub-concussion; Cognitive Processing; Eye Movements

When a woman desires to play baseball: a narrative story

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ABSTRACT

Baseball is Taiwan's national sport. Both men and women can be obsessed with baseball in Taiwan. However, gender difference was found in the ways people express their obsession for baseball and in the form of baseball participations. Baseball players are mostly male dominated while female usually plays the part of cheerleaders or fans off the baseball court. Previous researches mentioned gender taboos in the baseball culture. Perhaps this traditional culture has created the gender difference found on the baseball court. How this gender difference has effect on woman's desire to participate in baseball is unknown. Therefore, this study interviewed a woman who has ever so obsessed with baseball and tried to understand how the traditional culture in baseball about gender taboos sculped her experience of obsession with baseball. Based on narrative research method, this study attempted to showed the female participant's story of her experiences as a baseball player and a referee. Through narrative analysis, the story of the female participant presented a main theme, which is "a woman seeks a sense of accomplishment on the red clay". Under the main theme, the story showed how a woman battled between inner desire to become a baseball player and cultural obstacles against female on the baseball court. The story also illustrated how a woman made peace with physical defaults due to gender differences but at the same time striving to build her career path according to her passion for baseball. Despite her frustration with gender inequality on baseball court, her story was inspiring to those women who faced same dilemmas. Future recommendations were presented for professionals as coaches or counselors to better help women deal with gender taboos and restrictions and find their desired place in baseball.

KEYWORDS

female baseball player;
narrative; gender difference

Externalizing problems in preschool children with developmental coordination disorder: a preliminary analysis

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ABSTRACT

Introduction: Prior research has found that preschool children with developmental coordination disorder (DCD) are at greater risk for internalizing problems, such as anxiety or depression, compared to their peers. However, as the intertwined relationship between internalizing and externalizing problems, there is still a lack of evidence in preschool children regarding their externalizing

KEYWORDS

motor difficulty; child health;
mental health; early
childhood; motor
coordination

problems, such as aggressive behaviors or attention problems. Purpose: This study was to investigate the externalizing problems in preschool children with DCD. Methods: Fifty-four Taiwanese children aged between 4 and 6 years and their parents participated in this study. All children had no intelligent impairment or neurological conditions which may impact their motor coordination. Those who scored at or below the 16th percentile on the Movement Assessment Battery for Children – 2nd edition were identified as DCD. Their externalizing problems were reported by parents using the Child Behavior Checklist (CBCL) Ages 1.5-5 or 6-18 based on children's age. As the syndromes of externalizing problems differed between two age versions of the CBCL, the T score was used to represent the level of externalizing problems for all children, whereas the number of children at the clinical range was also calculated. Mann-Whitney U test and Chi-square test were used to examine the difference in the T score and the number of preschool children at the clinical range between children with and without DCD, respectively. Results: There were eight children with DCD and 46 typically developing (TD) peers in this study. There was no significant difference in the T score of externalizing problems between preschool children with and without DCD ($p = .821$). However, preschool children with DCD were more likely to score at or above the clinical threshold of externalizing problems (25.0% in DCD vs. 2.2% in TD, $p = .054$). Conclusion: Our preliminary findings indicate that externalizing problems, including attention problems, aggressive and rule-breaking behaviors, may have existed in children with DCD during early childhood. Therefore, in order to improve these children's well-being, the intervention may target the strategies used to cope their behavioral problems which may subsequently adversely affect their interactions with the peers. However, due to a small sample size and the cross-sectional design of this study, longitudinal research with a larger sample size is needed.

Coping with an acute stress in sports- a study on athletes' perceived referee justice and emotional responses

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ABSTRACT

Numerous studies have shown that athletes' stress and their coping strategies influence their performance. Successful coping with stressful events during competition can lead to successful performance and better emotional and behavioral responses. However, in terms of acute stress in sports, empirical research is insufficient and the effective coping strategies were unaware. Literature indicated that coping with acute stress is primarily a function of both personal and situational characteristics. This study focused on one of the pronounced acute stress on the

KEYWORDS

procedural justice; distributive justice; interactional justice; coping styles; avoidance strategy

court- perceived referee justice. Literature indicated that an individual's justice perception influences affect and behavior. Athletes' perception of fairness from referees may result in stressful feelings and strongly influence their performance. The purpose of this research was to examine the influence of perceived referee justice on athletes' positive and negative emotions. Furthermore, the moderating effect of coping strategies on the relationship between acute stress and athletes' emotion was tested. A total of 248 college basketball players completed the questionnaires immediately after competitions and 226 valid questionnaires were analyzed. Perceived referee justice, coping strategies, and positive and negative emotions were measured. The results showed that perceived referee justice and problem-focused coping strategies were positively correlated, but the relationship between perceived referee justice and avoidance strategy was not significant. Furthermore, perceived referee justice was positively related to positive emotion and negatively related to negative emotion. In terms of moderating effects, problem-focused strategy moderated the relationship between perceived referee justice and positive emotion; avoidance strategy moderated the relationship between perceived referee justice and negative emotion. The findings of the present research suggest that athletes' perceived referee justice in the sports field influenced their emotions and different types of coping strategies exhibited different moderating effects. Especially, in line with the literature, when there is a lack of control such as the acute stress from perceived referee unfairness, avoidant coping can be advantageous. From an applied perspective, future research should continue to figure out the approach and avoidance coping framework and to offer interventions that help ensure appropriate coping responses. Research using situational manipulation is also needed in the future. Furthermore, research should focus on different coping strategies that are beneficial to make more contributions to the real sports field.

Relationship between athlete stress and burnout: a systematic review and meta-analysis

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ABSTRACT

Success in sports brings glory, fame, and abundant monetary rewards. However, achieving the highest positions in sports requires long-term dedication. Burnout is a negative consequence of stress that has received attention in the field of sports. Based on Smith's (1986) "cognitive-affective model of athletic burnout," this systematic review and meta-analysis quantified the relationship between athlete stress and burnout. An academic database (EBSCO, ProQuest, PubMed, OVID, and WOS) search was conducted from 2001 to 2021. Three keywords were used to

KEYWORDS

elite athletes; emotional exhaustion; devaluation of sport; sports performance

identify relevant articles: (1) burnout, (2) stress OR distress OR pressure, and (3) athlete* OR sport* OR player*. Only peer-reviewed publications available in English were included. Initial searches returned 577 articles, we used the criteria below to examine each article to determine its inclusion or exclusion during screening stages: (I) the study was not related to stress and burnout; (II) the samples investigated were not athletes, (III) the study was not quantitative analysis (IV) the full text were not available in English, and (V) stress-related data were not presented in the results. A total of 50 empirical articles were included in the analysis, of which 46 used the Athletes Burnout Questionnaire (Raedeke & Smith, 2001) and a three-dimensional model to measure athlete burnout. The measures of athlete stress were more diverse, including the Perceived Stress Scale (PSS; Cohen et al., 1983), the College Student-Athletes' Life Stress Scale (CSALSS; Lu et al., 2012), and the Recovery-Stress Questionnaire (RESTQ; Kellmann & Kallus, 2001). The meta-analysis results supported the stress–burnout relationship, yielding an overall effect size of 0.499. The *r*-value of the relationships between athlete stress and the overall burnout and three-dimensional burnout scores ranged from 0.401 to 0.522. The relationship between stress and a reduced sense of accomplishment was the strongest in participants of all ages and competitive levels, and the relationship between stress and devaluation of sports participation was relatively low in all groups. Furthermore, the results revealed differences in the stress–burnout relationship in different age groups. However, most studies used student-athletes as research samples, which highlights the need for further research exploring the continuity of and change in stress–burnout relationships across athletes' life. Discussion and implications are outlined.

A seven weeks imagery training program for competitive high school archers

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ABSTRACT

Imagery training is an essential part for archery's training. Archers use imagery to improve their skills and attentional regulation. Although Taiwan archery team won bronze medal at the 2016 Rio Olympics women's event, the competitive high school archers are not familiar with psychological skill training. Therefore, it is important to teach competitive archers to use imagery to enhance their mental skills and performance. Purposes: The purpose of this study was to explore the imagery training process of a high school archery team to examine their improvement in imagery ability, anxiety regulation, psychology skill and performance. Methods: The imagery training conducted seven weeks for six high school competitive archery players (3 male and 3 female) before the national game. The participants played

KEYWORDS

psychological skills training; PETTLEP; sports psychology services

archery for four years and practiced six days of a week. The imagery training script was designed for the ranking competition, the group match, and the individual competition. The imagery contents included archery technique, focus control, and emotional regulation. The archers practiced imagery training every day in the seven weeks. We measured three times of imagery ability, anxiety, psychological skills, and performance scores. Results: The results revealed that three archers increased their imagery ability (mastery, goal, and strategy). Two players increased their confidence and decreased somatic anxiety. Five players increased their psychological skills. The six archers maintained at their performance score. Conclusion: The results revealed that the seven weeks imagery program is not useful for all the six players. The seven weeks before the national game may make the imagery program become a difficult task. However, it seems a good starting for the six archers to contact psychological skill training and to rich their everyday training routine.

The validation of the malay version of physical activity and leisure motivation scale among trainee teachers undergraduates

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ABSTRACT

The addressing of participation motivation in physical activity is decisive in augmenting the factors that can motivate one's to participate, sustain and promote healthy living through PA. The Physical Activity and Leisure Motivation Scale-M (PALMS-M: Kueh, Kuan & Morris, 2017) – 40 items has been utilised to measure eight subscales (enjoyment, mastery, physical condition, psychological condition, other's expectations, appearance, affiliation, competition/ego) which were reflected on intrinsic and extrinsic motivation. The PALMS-M has demonstrated a good fit (CMIN/DF = 2.820, NFI = 0.90, CFI = 0.91, RMSEA = 0.06) among 502 Malaysian participants whose age ranged from 18 to 67 years (Molanorouzi, Khoo & Morris, 2014). However, the Malay version of the PALMS demonstrated an improved fit ((RMSEA = .041 (90% CI: .038, .044), CifitRMSEA = 1.000, CFI = .911, TLI = .901, SRMR = .052) with 38 items out of the 40 items among 634 university undergraduate students (Kueh, Kuan & Morris, 2017). Purpose: The aim of the study is to validate the Malay version of the PALMS-M (Kueh, Kuan & Morris, 2017) among the 405 trainee teachers undergraduates aged between 17 to 22 years old (1.72 + .78). Methods: The confirmatory factor analysis, discriminant validity and composite reliability were performed in examining the psychometric properties of the PALMS. Results: The initial Structural Equation Modeling (SEM) showed the data fits was not ideal at the initial SEM (CFI = 0.85, RMSEA = 0.08, TLI = 0.84, $\chi^2/df = 3.81$). Thus, few modification were performed which include

KEYWORDS

PALMS-M; Validation; Trainee Teachers

deletion of items and covariance between items. The final data fits were CFI = 0.93, RMSEA = 0.06, TLI = 0.92, $\chi^2/df = 2.81$ which indicated acceptable model fit. The discriminant validity for all the subscales were below cut-off value, $r = 0.90$ (Henseler, Ringle & Sarstedt, 2015). Lastly, the CR values ranged from 0.73 to 0.92 which showed high internal consistency. Conclusion: The PALMS-M showed adequate validity and reliability of its structure in 8 subscales in assessing participation motivation towards physical activity.

The dual career assistance framework: a synthesis of research findings in the context of Swedish sports and higher education

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ABSTRACT

The professional dual career (DC) practice is emerging at university level in Sweden. Key for this development has been the dissemination of research findings, sharing of good practices, and establishing the Swedish national guidelines for elite athletes DCs (Swedish Sports Confederation, 2018). Although the Swedish DC guidelines outlines key areas for support, there is a lack of applied frameworks that can guide the support provision. Through a series of conceptual discussions, we synthesized findings from DC research that has flourished in recent years (see Stambulova & Wylleman, 2019 for a review) and present the DC assistance (DCA) framework. We link key ideas and concepts from the holistic developmental (Wylleman, 2019) and the holistic ecological (Henriksen & Stambulova, 2017) approaches, emphasizing a support that integrates a whole person, whole career, and whole environment perspective. The DCA framework is structured as a pyramid embedded in the national DC context and the local dual career developmental environment (Linnér et al., 2020). Major components include (from bottom-to-top): (a) the aim of support provision being helping student-athlete to develop and maintain optimal DC balance in the DC pathway. That is, helping student-athletes reach their sport and study goals, live satisfying private lives, and maintain health and wellbeing (Stambulova et al., 2015), (b) the DC scenarios (i.e., difficult situations or periods; Wylleman et al., 2017) and transitions that challenge the perceived DC balance, (c) the coping resources including personal resources (i.e., DC competences; Linnér et al., 2019) which are complemented and/or compensated by DC support (i.e., social support and help from others), (d) coping strategies (i.e., actions to deal with the DC scenarios and transitions), and (e) the outcome expressed in student-athletes' becoming "winners in the short- and long-run" (Lindahl et al., 2011; Stambulova et al., 2015) meaning being able to manage the demands of a DC lifestyle and reap the benefits of

KEYWORDS

Balance; Career Assistance; Dual Career; Professional Practice

a DC (e.g., improved post-athletic career adaptation). Taken together, the suggested sequence of components guides DC support providers in helping student-athletes to choose the most efficient coping strategies to meet their challenges and maintain their DC balance. The DC support providers also need to keep in mind that depending on the person, situation, and context, some coping resources (e.g., athletic identity, motivation, or flexibility) might turn into a barrier to deal with (Stambulova, 2009). The DCA framework will be presented supported by research findings to stimulate an evidence-based professional DC practice.

Integrating mental imagery to the spiking performance of selected volleyball players of the university of santo tomas

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University of Santo Tomas

ABSTRACT

The attainment of optimal sports performance through physical training alone has been proven inadequate, thus the integration of psychological skills training to the training program of athletes has become a growing solution. Mental imagery is one type of psychological skill wherein athletes see and feel in their minds a particular skill before its actual execution in training or in competition. This study is a true-experimental research which aimed to determine if there is a significant difference between the pre- and post-test imagery ability and spiking performance of volleyball varsity team members at the University of Santo Tomas (UST) after the integration of mental imagery training. The study had a treatment group (UST Women's Volleyball Team and UST Boys' Volleyball Team) and a no treatment group (UST Men's Volleyball Team and UST Girls' Volleyball Team). The researchers made use of the Sports Imagery Ability Questionnaire (SIA-Q; Williams & Cumming, 2011) and an intervention, which is the integration of mental imagery (3 sessions within a week), to the treatment group. The results showed a significant increase in the spiking performance ($p = 0.005$) and imagery ability ($p = 0.000$) of the treatment group. On the other hand, results from the no treatment group reported no significant difference on their spiking performance ($p = 0.094$) and imagery ability ($p = 0.043$). The researchers were able to conclude that the implementation of the mental imagery training improved the spiking performance and the imagery ability of the participants. The researchers strongly recommend the integration of mental imagery to the training program of athletes from any sport and at any level. Also, it is suggested for future researchers to continue studying the effects of the implementation of mental imagery training on sport, exercise, and performance.

KEYWORDS

mental imagery; imagery ability; spiking performance; volleyball players; collegiate student-athletes

The differences in direction anticipation between experience level of tennis double player's volley in virtual reality

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ABSTRACT

Virtual Reality is a fast-rising product with the technological development. The degree of vividness of virtual reality is getting higher and the images that can be presented are becoming more varied. Craig (2013) proposed that exposure to virtual reality has a significantly higher reality than ordinary 2D film, and the ecological validity is significantly improved. Vignais, Kulpa, Braault, Presse, and Bideau (2015) also showed that athletes had better anticipation in virtual reality as compared to traditional 2D films. The purpose of this study was to compare the differences in direction anticipation between experience level of tennis double players' volley in virtual reality. Twenty-four young healthy male were recruited as participants. Experience group was consisted of 12 tennis players who had been training in tennis for at least 2 hours each time, 2 times / week for at least 6 years. Novice group was consisted of 12 young males who had not received any training in racket sports. Two players from the Open Group of the National Intercollegiate Athletic Games were recruited as the actors. The actors wore the Shadow Motion to record their body motion while performing 3 straight and 3 diagonal strokes at the bottom line. The path of the ball was made by Kwon3D and all image was imported to unity, and play on HTC Vive. Participants were then required to watch the shot in virtual reality, and return the ball with a tennis racket. One-sample t- test and an Experience Level \times Temporal Occlusion mixed design two-way ANOVA were used to examine the accuracy of the direction anticipation. The results replicated the classical experience level effect in virtual reality.

KEYWORDS

virtual reality; anticipation; temporal occlusion; tennis

A novice sports psychology practitioner's first five individual sessions: a reflective analysis

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ABSTRACT

Student practitioners offer unique insight to the sport psychology field as they embark upon the journey toward facilitating change with their clients and growth as practitioners. Novice practitioners are more likely to rely upon fixed methodologies for addressing client needs, and may emphasize psychoeducation over rapport-building and exploration of client needs (Aoyagi, 2020). The present study is a reflective analysis which details the experience of a novice sport and performance psychology student as he

KEYWORDS

rock climbing; novice practitioner; mindfulness; reflective analysis

conducts his first five individual client sessions. The performance client is an adult rock climber seeking to improve mental performance and relationship toward fear of falling. Within the rock climbing community, fear of falling impedes progress of beginner and advanced rock climbers, especially those aged 25-35 ("New Research, Men Age 25-35"). The novice practitioner utilized the Performance Interview Guide (PlnG; Aoyagi et al., 2017) to identify the client's performance needs. This was followed by a Mindfulness-Acceptance-Commitment approach (MAC; Gardner & Moore, 2004) which was used to systematically guide the athlete through a structured process of mindful awareness using values commitment and sport-specific mindfulness integration strategies. This study is comprised of session notes and reflections analyzed via a heuristic process (Brisola & Cury, 2016) to enable the practitioner to elucidate learnings, strengths and areas for growth. In addition, practitioner reflections were analyzed to represent the perceived strengths and limitations of using fixed methodology (PlnG, MAC) for addressing a client's needs. Results suggest that there are both benefits and limitations for a novice sport and performance psychology practitioner in utilizing a set protocol for identification of client needs and resolution of those needs. Namely, a set approach is inherently unadaptable to evolving client needs, but does provide structure for achieving a stated outcome. Further research should seek to codify best practices for novice sport and performance psychology practitioners conducting their initial sessions.

Competitive characteristics of "academy" players enrolled in the japan football league clubs-comparisons of competitive psychological abilities between regular and non-regular players

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ABSTRACT

The Japan Professional Football League (J.League) is mandated to maintain an organization for youth players called the "Academy" to develop future J. League players. The Academy is composed of Primary, Junior, Youth, and Top-level teams. In 2001, J. League started the "Football-players development project" to strengthen Japanese football, develop socially independent people, and promote regional sports. Their main activities included developing players of different age-groups, building relationships with schools, administrative organizations, and local communities, securing and maintaining facilities, and training and securing coaches, among others. In 2002, The J. League Academy started a project to establish a "system for developing Japanese-style football-players".

KEYWORDS

Japan; Football; League; Academy; players

Each soccer club in J. League is obliged to have an organization for youth players called the “Academy.” The Academy provides consistent coaching to develop future J. League players. Moreover, the Academy helps to develop an environment for bringing up children who cooperate with local communities and conducts surveys and research related to training young players (J.League,Online).

The present study examined the Academy’s soccer players’ competitive abilities by comparing competitive psychological ability among regular, semi-regular, and non-regular players using the Diagnostic Inventory of Psychological Competitive Ability for Athletes (DIPCA. 3) to clarify essential psychological characteristics of football players. Statistical data were analyzed by one-way analysis of variance, using IBM SPSS Statistics 21.0. Bonferroni multiple comparisons were conducted on data with significant differences. The results were used for improving the competitive abilities of the players. The comparison of the frequency of twelve DIPCA.3 subscales indicated the main effects of seven subscales. Two subscales scores (Confidence and Decision) were significantly higher in regular players than semi-regular players. Moreover, seven subscale scores (Patience, Aggressiveness, Volition for winning, Volition for winning, Confidence, Decision, Judgment) were significantly higher in regular players than non-regular players. However, semi-regular players did not have significantly higher scores than regular players, whereas the Aggressiveness subscale score was considerably higher in regular players than non-regular players. Non-regular players did not show significantly higher scores than regular or semi-regular players in any subscale. It is suggested that regular players have more confidence and decision-making ability, positively thinking, combined with no anxiety or worries during play.

Examining the relationship between the parents and coach in influence japanese youth athletes’ motivation in junior high school athletic club activities-focus on the differences in perception between the two parties

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ABSTRACT

Parents and coaches are factors that have the greatest impact on children’s motivation in youth sports settings (Côté et al., 2014; Weinberg & Gould, 2014). The dynamic and reciprocal process between these factors influences youth development in youth sports (e.g., Dorsch et al., 2020). A qualitative intervention study on a single team suggested that increased communication between parents and coaches might affect children’s intrinsic motivation and increase enjoyment (Harwood & Swain, 2002;

KEYWORDS

Interaction between parent and coaches; Intrinsic motivation; Amotivation; Youth sport; Parents’ association

Dorsch et al., 2017). Previous studies qualitatively investigated relationships. However, the impact of a quantitative relationship between parents and coaches on youth athletes' motivation has not been fully investigated. Thus, in this study, we first developed a questionnaire that measured the relationship between coaches and parents. Subsequently, we examined how coaches and parents influence children's motivation. Factor analysis was performed using the 47 items selected in the preliminary survey, and "the parent's behavior scale in athletic club activities in Japan" was developed. This questionnaire consisted of four factors that included 16 items ($\alpha = .94$). Further, whether the differences between perceptions of parents and coaches (e.g., perception toward parent's behavior) influenced children's motivation was examined. Complete data were obtained from 215 participants. Parents and coaches completed the developed questionnaire, and the children completed the Sport Motivation Scale (Pelletier et al., 1995; Sugiyama, 2008). Hypotheses were tested using the Ordinary Least Squares regression model. "IM to experience stimulation" at intrinsic motivation was a significant and negative predictor of the differences in perceptions between parents and coaches ($\beta = -.24, p < .05$). The results of this study suggest that fewer differences in the perceptions between parents and coaches may improve children's motivation. Sessions that decrease differences between perceptions of parents and coaches (e.g., create an environment to promote their communication) should be provided by consultants because the lesser the differences, the higher the intrinsic motivation of youth athletes.

Examining the differences in influences of sport-confidence and group cohesion on training effects among female student-athletes

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ABSTRACT

Psychological factors are shown to affect sport performance (e. g., Carron et al 2002; Pelletier et al., 2013), and athletes' long-term strength gain may also be influenced by these individual and environmental psychological factors. However, how psychological factors influence athletes' long-term strength gain in real training settings has not been fully investigated. Further, with COVID-19 still affecting training of many athletes in the world, it may be necessary to examine the influence of different training situations. The purpose of this study was to examine the influences of individual (i.e., sport-confidence) and environmental psychological factors (i.e., group cohesion) on the changes in one repetition maximums (RM), and to compare how the relationships may change between training situations, such as training alone at

KEYWORDS

Self-efficacy; Group dynamics; Women; 1RM; COVID-19

home (i.e., during stay-at-home period) and training with teammates (i.e., usual training situation). Complete data were obtained from twenty-two female handball student-athletes. Participants completed The Japanese version of the Sport-Confidence Inventory (Wakui et al., 2015) and the Group Environment Questionnaire (Carron et al., 1985; Oda, 2007) during stay-at home period and usual training situation that allow them to train together at a gym. The pre-1RMs in front and back squat, and power clean were measured at the same month as these psychological assessments. The post-1RMs were measured after four to five months since the pre-1RM tests. We performed a principal component analysis to select the combined factor from extracted scores using the three 1RM items. Hypotheses were tested using the Ordinary Least Squared regression model. Having post-1RM score as a dependent variable, we entered the pre-1RM score in the first step to control for these effects. Then, we entered sport-confidence and group cohesion in the second step. In a stay-at-home training situation, sport-confidence ($\beta = .19, p < .05$) and task cohesion ($\beta = .18, p < .05$) at the pre-test was found to be a significant and positive predictor of post-1RM scores. However, in the usual training situation, these psychological factors had no significant effects on the changes in 1RM. Findings suggest that different relationships between psychological factors and the training effects may appear between training situations. It may be important to improve athletes' sport-confidence and group task cohesion especially during situations that require athletes to do their training by themselves at alone. The future studies may need to explore other psychological factors that are related to training effects in usual training situations.

Gender differences in athletes' intrinsic motivation during Covid-19 lockdown

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ABSTRACT

Intrinsic motivation is an essential concept of The Self-Determination Theory - SDT (Deci & Ryan, 1985). People are intrinsically motivated when there is no external causality and a person is engaged in an activity autonomously and with a sense of joy and competence. Regarding restrictions and externally pressured routine change due to covid-19 lockdown, athletes intrinsic motivation emerged as an important practical and research question. The purpose of this research was to explore if there are gender differences in athletes' perceptions of intrinsic motivation for training practices during the first covid-19 lockdown. The sample included 150 athletes, 68 male, and 82 female, age from 15 to 36 years. Participants are members of the Olympic (4,7%) or national team in their sports (54%) or compete at the first (34%) or the second league in their sports (7,3%).

KEYWORDS

intrinsic motivation; gender differences; covid-19; perceived interest; perceived choice

Athletes are mostly from team sports (70,7%), while 29,3% are from individual sports. One month after the total first lockdown due to the Covid19 pandemic, athletes were asked to participate in this research on a voluntary basis. The applied instrument was the Intrinsic Motivation Inventory (Deci, Eghrari, Patrick & Leone, 1994), 22-item and four factors version of the scale (interest/enjoyment, perceived choice, perceived competence, and pressure/tension). The scale was translated into Serbian language and adapted to target athletes' intrinsic motivation for training practice in Covid-19 lockdown circumstances. Descriptive statistics and ANOVA were applied. Results showed statistically significant differences between male and female athletes on three factors of the scale: interest/enjoyment ($F = 10.350$; $p < 0.002$), perceived choice ($F = 10.845$; $p < 0.001$), and pressure/tension ($F = 6.086$; $p < 0.015$). During covid19 lockdown female athletes perceived a higher level of interest and enjoyment at training practices ($M = 3.54$; $SD = 1.07$) than male athletes ($M = 2.95$; $SD = 1.16$). Female athletes also perceived greater choice in the training context ($M = 3.52$; $SD = 0.73$) than male athletes ($M = 3.03$; $SD = 0.69$). But, male athletes perceived greater pressure and tension during training practices ($M = 2.38$; $SD = 0.68$) than their female colleagues ($M = 2.10$; $SD = 0.68$). Gender differences that emerged in this research are in line with other researches grounded in SDT (Chantal et al, 1996). Female athletes usually exhibit greater intrinsic motivation and internal regulation than male athletes. Also, the latest data on gender differences regarding perceptions related to the Covid-19 pandemic go in favor of females (Galasso et al, 2020). Studies from different countries indicated that women are more likely to agree with restraining public policy measures and to comply with them.

Differences in intrinsic motivation between individual and team sports athletes during Covid-19 lockdown

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ABSTRACT

Self-determination theory (SDT) is an empirically derived theory of human motivation and personality in social contexts that differentiates motivation in terms of being autonomous and controlled (Deci & Ryan, 2012). Intrinsic motivation is the most autonomous form of motivation, related to greater well-being, long-term motivation, and performance. It is not dependent on external incentives or pressure, but rather provides its own satisfactions and joys. But control orientated social context may undermine intrinsic motivation. In regard to restrictions and externally pressured routine change due to covid-19 lockdown, athletes intrinsic motivation emerged as an important not just research, but also a practical, question. The purpose of this research was to explore if there are differences between individual and team sports athletes' perception of intrinsic

KEYWORDS

intrinsic motivation; covid-19; individual sports; team sports

motivation for training practices during the first covid19 lockdown. The sample included 150 athletes, 45,4% males, and 54,7% females. Age range was from 15 to 36 years, 44 athletes were from individual sports (gymnastics, athletics, shooting, tennis, rowing, canoe sprint, swimming), and 106 from team sports (handball, soccer, volleyball). Participants are members of the Olympic (4,7%) or national team in their sports (54%) or compete at the first (34%) or the second league in their sports (7,3%). One month after the total first lockdown due to the Covid19 pandemic, athletes were asked to participate in this research on a voluntary basis. The applied instrument was the Intrinsic Motivation Inventory (Deci, Eghrari, Patrick & Leone, 1994), 22-item and four factors version of the scale (interest/enjoyment, perceived choice, perceived competence, and pressure/tension). The scale was translated into Serbian language and adapted to target athletes' intrinsic motivation for training practice in Covid-19 lockdown circumstances. Descriptive statistics and ANOVA were applied. Results showed statistically significant differences between individual and team sports athletes' perception of interest/enjoyment ($F = 3.733$; $p < 0.05$) and perceived choice ($F = 5.114$; $p < 0.025$). During the first covid19 lockdown athletes from team sports perceived a higher level of interest and enjoyment at training practices ($M = 3.39$; $SD = 1.07$) than athletes from individual sports ($M = 2.99$; $SD = 1.29$). Athletes from team sports also perceived greater choice at training ($M = 3.33$; $SD = 0.71$) than athletes from individual sports ($M = 3.03$; $SD = 0.71$). Differences between individual and team sports athletes emerged in this research suggesting that team sports athletes have more adaptively adjusted to covid-19 lockdown restrictions and were more successful in preserving the sense of interest, enjoyment, and choice in their everyday routine.

Gender differences in athletes' perception of basic psychological needs satisfaction and needs frustration during Covid-19 lockdown

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ABSTRACT

Basic Psychological Need Theory suggests that three basic psychological needs for autonomy, competence, and relatedness are essential for human functioning and well-being (Deci & Ryan, 2000). When the social environment supports these three basic psychological needs, individuals will experience need satisfaction and optimal functioning. Whereas when the social environment thwarts these needs, individuals will experience need frustration and psychological ill-being. With the Covid19 pandemic and experience of lockdown, athletes had to adjust their daily training practice and routine to brand new restrictions and health policies. New everyday experiences in life and training might have affect

KEYWORDS

basic psychological needs;
covid-19; gender differences;
autonomy; competence

athletes' perception of personal autonomy, competence in training, and relatedness to others. The purpose of this research was to explore if there are gender differences in athletes' perception of basic needs satisfaction and needs frustration during the first covid19 lockdown. The sample included 150 athletes, 68 male, and 82 female, age from 15 to 36 years. Participants are members of the Olympic (4,7%) or national team in their sports (54%) or compete at the first (34%) or the second league in their sports (7,3%). Athletes are mostly from team sports (70,7%), while 29,3% are from individual sports. One month after the total first lockdown due to the Covid19 pandemic, athletes were asked to participate in this research on a voluntary basis. The applied instrument was the Basic psychological Need Satisfaction and Need Frustration in Sport Scale (Aelterman, Vansteenkiste, Van Keer & Haerens, 2016). English version of the scale was translated into Serbian language and adapted to the sports training context. Descriptive statistics and ANOVA were applied. Results showed statistically significant gender differences in athletes' perception of autonomy ($F = 7.610$; $p < .007$) and competence ($F = 4.773$; $p < .030$) satisfaction. During covid19 lockdown female athletes perceived a higher level of satisfaction of need for autonomy ($M = 3.81$; $SD = 0.74$) than male athletes ($M = 3.49$; $SD = 0.68$). Female athletes also perceived a higher level of satisfaction of need for competence ($M = 4.23$; $SD = 0.75$) than male athletes ($M = 3.929$; $SD = 0.99$). Results of this research go in line both with studies of basic psychological needs in sport and the latest data on gender differences regarding perceptions related to the Covid-19 pandemic (Galasso et al, 2020). Some latest studies from different countries indicated that women are more likely to perceive Covid-19 as a very serious health problem, to agree with restraining public policy measures, and to comply with them.

Differences in perception of basic psychological needs satisfaction and needs frustration between individual and team sports athletes during Covid-19 lockdown

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ABSTRACT

Research grounded in Basic Psychological Need Theory (Deci & Ryan, 1985; Ryan & Deci, 2002) has increasingly focused on both the bright and dark sides of the three basic psychological needs. Considering not just the bright, but also the dark side of the need for autonomy, competence, and relatedness seemed especially important in the latest social context defined by the covid-19 lockdown. The purpose of this research was to explore if there are differences between individual and team sports athletes' perception of basic needs satisfaction and needs frustration during the first covid19 lockdown. The sample included 150 athletes, 45,4% males, and 54,7% females. Age

KEYWORDS

basic psychological needs;
covid-19; individual sports;
team sports

range was from 15 to 36 years, 44 athletes were from individual sports (gymnastics, athletics, shooting, tennis, rowing, canoe sprint, swimming), and 106 from team sports (handball, soccer, volleyball). Participants are members of the Olympic (4,7%) or national team in their sports (54%) or compete at the first (34%) or the second league in their sports (7,3%). One month after the total first lockdown due to the Covid19 pandemic, athletes were asked to participate in this research on a voluntary basis. The applied instrument was the Basic psychological Need Satisfaction and Need Frustration in Sport Scale (Aelterman, Vansteenkiste, Van Keer & Haerens, 2016). English version of the scale was translated into Serbian language and adapted to the sports training context. Descriptive statistics and ANOVA were applied. Results showed statistically significant differences between individual and team sports athletes' perception of autonomy satisfaction ($F = 7.064$; $p < 0.009$), competence satisfaction ($F = 9.277$; $p < 0.003$), and competence frustration ($F = 6.075$; $p < 0.015$). During the first covid19 lockdown athletes from team sports perceived a higher level of satisfaction of need for autonomy ($M = 3.76$; $SD = 0.69$) than athletes from individual sports ($M = 3.42$; $SD = 0.78$). Athletes from team sports also perceived a higher level of satisfaction of need for competence ($M = 4.22$; $SD = 0.77$) than athletes from individual sports ($M = 3.76$; $SD = 1.03$). But athletes from individual sports reported a higher level of competence frustration ($M = 2.09$; $SD = 0.88$) than athletes from team sports ($M = 1.75$; $SD = 0.72$). Differences between individual and team sports athletes emerged in this research suggesting that team sports athletes have more adaptively adjusted to covid-19 lockdown restrictions and were more successful in preserving the sense of autonomy and competence in their everyday routine.

Subjective and actual anti-doping knowledge among japanese university athletes

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ABSTRACT

Since the number of anti-doping rule violations (ADRVs) in Japan is low by international standards (less than 10 each year), many athletes may believe that they have not been involved in doping. However, athletes have reported several ADRVs at the international level, including Olympians, since 2018. In addition to doping due to unknowing and inadvertent use of medicines containing banned substances for therapeutic purposes, the percentage of ADRVs due to consumption of supplements containing banned substances has increased sharply to around 40% (10 out of 26 cases) since 2015. ADRVs also occur in

KEYWORDS

Anti-doping education; Anti-doping knowledge; Subjective knowledge

university athletes participating at the national level. Previous research has shown that Japanese university athletes have low knowledge of anti-doping, despite the educational opportunities available. This may be due to the gap between athletes' subjective and actual knowledge of anti-doping. This situation is not completely understood. Therefore, this study investigates the differences between actual state of anti-doping knowledge and subjective anti-doping knowledge, among Japanese university athletes. It also captures the direction of educational interventions. Japanese university athletes (male = 320; female = 166) engaged in sports, at member organizations of the Japan Anti-Doping Agency, participated in the survey. Data regarding actual anti-doping knowledge was collected through the 12-question, 4-choice test from the former e-Learning program of the World Anti-Doping Agency (passing index 10 points+). Subjective anti-doping knowledge was examined through a question, "I have sufficient knowledge about anti-doping," that participants responded to using four options (strongly disagree, somewhat disagree, somewhat agree, strongly agree). The Kruskal-Wallis H test was conducted with subjective anti-doping knowledge scores as the independent variable and ALPHA scores as the dependent variable. The mean ALPHA scores of subjective anti-doping knowledge were 8.74 (± 2.20), 9.02 (± 2.15), 8.64 (± 2.06), and 8.77 (± 2.36) for strongly agree, somewhat agree, somewhat disagree, and strongly disagree, respectively. A comparison of subjective anti-doping knowledge and ALPHA scores showed no significant difference, and the effect size was small ($\chi^2(3, 485) = 3.364, p = .339, \eta^2 = .01$). Results showed that athletes' subjective anti-doping knowledge did not match their actual anti-doping knowledge, regardless of the competition level. This suggests that even if actual anti-doping knowledge is inadequate, athletes may not be aware of it accurately. To prevent doping pitfalls caused by the gap between subjective and actual anti-doping knowledge, preventive education programs based on the improvement of practical anti-doping knowledge are required.

The effect of hardiness on stress and quality of life during the preseason.

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ABSTRACT

The preseason period involves heavy training for team sport athletes. Hardiness is one of the personality characteristics of superior athletes, a multidimensional trait hypothesized to protect people from the effects of stress. This study thus examined the effect of hardiness on stress and quality of life (QOL) during the preseason. University student-athletes (N = 296) completed a sociodemographic survey, a Japanese version of the Hardiness Scale for university students, comprising three

KEYWORDS

mental health; resilience; hardiness

subscales (commitment, challenge, and control), and the Diagnostic Inventory for Mental Health Pattern. Commitment involves dedication and engaging in an activity without quitting; control refers to feeling and acting as if one is influential (as opposed to being helpless) in the face of adversity; and challenge refers to the belief that change, rather than stability, is peculiar in life, thus anticipating change is an incentive to grow rather than a threat to security (Kobasa, 1979). A multiple regression analysis examined the effect of these subscales on stress and QOL after adjusting for potential covariates, such as age, gender, and competition level. First, the stress model accounted for 15.1% of the explained variance ($F(6, 295) = 8.6, p < .01$). Commitment ($\beta = -.27, p < .01$) and control ($\beta = -.18, p < .01$) were significant predictors of stress; however, challenge ($\beta = -.03, n. s.$) was not a significant predictor. Second, the QOL model accounted for 40% of the explained variance ($F(6, 295) = 33.8, p < .01$). Commitment ($\beta = .51, p < .01$) and control ($\beta = .17, p < .01$) were significant predictors of QOL, but challenge ($\beta = -.03, n. s.$) was not a significant predictor. These study findings suggested that athletes with high levels of hardiness were more likely to cope with stress and maintain high levels of QOL during the preseason period.

Physical self-perception, importance of physical self-domains, and aerobic capacity in high school students

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ABSTRACT

Perceived physical competence is considered to be a central determinant of behaviours related to physical activity (Babic et al., 2014). In combination with the importance people attribute to different physical self-domains, perceived physical competence is a stronger predictor of general self-esteem (Lindwall, Aşçi, Palmeira, Fox, & Hagger, 2011). Physical self-concept is related to fitness measures, with similar relations in genders (Marsh, 2007). This study analyzed the relationships among physical self-perception (sport competence, physical condition, physical appearance, physical strength, physical self-concept, and self-esteem), the perceived importance of physical self-domains, and aerobic capacity in a sample of high school students. Differences by gender and participation in physical activity were assessed. Participants were 140 students ($M = 66; F = 74$), between 14 and 21 years of age ($M = 16.36; SD = 1.726$) attending an Italian high school. The Italian version of the Revised Physical Self Perception Profile (PSPP-R, Lindwall, Aşçi, & Hagger, 2011) and the Perceived Importance Profile (PIP, Lindwall et al., 2011) were administered. The students' aerobic capacity was evaluated with a 20 Meter Shuttle Run Test (Leger et al., 1988). Students were grouped by gender and by participation in physical activity (PA participants

KEYWORDS

Physical Self; Perceived competence; Adolescence; Physical Activity

and non-PA participants). Non-PA participants students accounted for 45% of the overall sample (girls accounted for 60.8% of non-PA participants, boys for 27.3%). The MANOVA (2x2) showed significant differences in the observed variables with respect to gender (Wilk's $\lambda = .459$ $F = 12.286$ $p < .001$ $\eta^2 = .541$) and to participation in physical activity (Wilk's $\lambda = .772$ $F = 3.078$ $p = .001$ $\eta^2 = .228$), whereas there was not a significant gender x PA participation group interaction. The one-way ANOVA showed significant differences, with higher means in males, in perceived sport competence, physical condition, and strength, in the importance of sport competence and the importance of strength, and in the Shuttle Run Test scores. In females, means of the importance of physical appearance and the importance of physical self-concept were significantly higher than in males. With respect to the participation in physical activity, means of PA participants were significantly higher than non-PA participants in perceived sports competence, physical condition, and strength, in the importance assigned to these domains and to physical self-concept, and in the Shuttle Run Test scores. Results provide additional information on the importance of physical self-domains related to the physical activity participation. Differences between the results in the present study compared with previous studies are discussed. We make suggestions for teachers and educators on differentiation of activities between genders in adolescence.

Similar but not the same: the importance of observing communication style, motivational climate and leadership style of coaches

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ABSTRACT

Coaches' behaviour has been assessed from different psychological theories. Despite the conceptual relationships that have been established between some of these theories (Turnnidge et al., 2018), few empirical studies have focused on testing these links. For this purpose, this research aims to compare three systematic observation instruments widely used in the sports' field: the Coaching Behaviour Assessment System (CBAS) which is based on the cognitive-mediational model; the Multidimensional Motivational Climate Observation System (MMCOS) which is based on the empowering motivational climate; and the Coach Leadership Assessment System (CLAS) which is based on the full-range leadership model, to empirically test the possible relationships they may have and assess what contribution offers each instrument. The behaviour of a female coach of women's soccer during one match was analysed. The results from the three instruments used show high values for supportive communication, transformational leadership and empowering motivational climate, while low values are observed for punitive

KEYWORDS

systematic observation;
communication style;
leadership style;
motivational climate;
coaches

communication, toxic leadership and disempowering motivational climate. Thus, empirical evidence is provided on the relationships between the factors considered adaptive and also on the relationships between the factors considered non-adaptive. Moreover, the results show that each instrument assesses differential aspects of the coach's behaviour: (a) CBAS shows how the frequency of the coach's behaviour decreases as the match progresses, coinciding with the negative evolution of the score; (b) MMCOS shows that during the initial stretch of the match her communication style was more empowering than disempowering, while as the match evolves, the two dimensions come closer together and cross in the last stretch of the match, ending with a more controlling profile; finally, (c) CLAS show that in the moments in which the coach shows toxic leadership, she is talking to the assistant coach or has a self-dialogue, thus this toxic leadership is not directly affecting the players while transformational leadership behaviours do. Therefore, each instrument provides important and relevant nuances to describe the coach's behaviour from different perspectives and the sum of these perspectives offers a more complete view of the coach's behaviour. In conclusion, the present study provides empirical data on the conceptual relationships between the three theoretical bases and encourages to include more coaches for analysis and to increase the number of observations to check for consistency. This research has been carried out, in part, thanks to the Project HeDuCa "Promoción de Carreras Duales Saludables en el Deporte" Application Nr.: MINECO/RTI2018-095468-B-I0. ** In memoriam.

Effects of narcissistic personality traits on well-being and satisfaction in classical ballet dancers: a qualitative study

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ABSTRACT

The purpose of this study was to clarify the effects of narcissistic personality traits on the well-being and satisfaction of classical ballet dancers. We conducted semi-structured interviews with 18 experienced classical ballet dancers. Specifically, we investigated their perceptions of themselves as dancers and their body image and extracted keywords related to narcissistic personality traits. We also clarified how their narcissistic personality traits affected their well-being and satisfaction. The analysis was based on the modified grounded theory approach. From the interview data obtained, we conceptualized the narcissistic traits of classical ballet dancers and determined how they affected their well-being and satisfaction. Several concepts and categories emerged. For the "Perceptions of themselves as dancers" category, confidence in oneself, appeal, and the difference between practice and production were extracted as concepts from the semi-structured interviews. Some dancers mentioned that they were not

KEYWORDS

Narcissism; Classical Ballet Dancer; Well-being; Satisfaction; Semi-structured Interview

confident in their dancing ability and were conscious of what they could not do. However, they mentioned that after experiencing performances and studying abroad, they became positive dancers who accepted their own dancing ability and tried to perform dances that only they could do. Moreover, for the "Own body image" category, positive body image, negative body image, and body acceptance were extracted as concepts. Many female dancers were disgusted with their bodies, and it was found that this was due to the Japanese physical makeup (e.g., short stature, easy to gain weight). Many dancers said that they no longer felt negative about their own body because they understood that it could not be changed and that they were required to have a feminine, movable body. This suggests that their perceptions of themselves as dancers and body image changed from negative to positive due to various experiences and that they had narcissistic feelings. Most dancers mentioned that they felt a sense of well-being just from dancing when they got applause from the audience on stage and from the music. On the other hand, some dancers mentioned that they were not satisfied with ballet and that they should quit, suggesting that narcissism does not necessarily affect satisfaction with ballet. Thus, the results suggested that classical ballet dancers tend to be narcissistic and have a sense of well-being.

Psychosocial influence of an inclusive physical education project on inclusion and attitudes toward students with intellectual disabilities in Taiwan: a preliminary study

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ABSTRACT

To increasing (dis)ability awareness toward school-aged adolescents with intellectual disabilities (IDs) in general schools is a critical goal for the success of the Inclusion education movement. Using inclusive physical education and sports as a bond between students with and without IDs for better understanding with each other is the mission of Special Olympics. Thus, the purpose of this study was to examine the associations between school inclusion and attitude-related parameters toward students with IDs in the school period of the Special Olympics project in Taiwan. A cross-sectional study was conducted with 134 general students from five schools (69 boys and 65 girls; age 11-19 years), who took part in a descriptive online or paper survey, responding to school inclusion and attitude toward students with IDs after participating in six-month Unified Champion School project, supported by Special Olympics International. Relationships between school inclusion and attitude-related parameters (social attitude and cognitive attitude) toward students with IDs were examined using stepwise linear regression. Results showed that school inclusion ($R^2 = .216$,

KEYWORDS

Disability awareness; adolescent; special education; Special Olympics

$p < .001$) was significantly predicted by social attitude ($\beta = .430$, $p < .001$) and age ($\beta = .173$, $p = .03$). Social attitude ($R^2 = .322$, $p < .001$) was significantly predicted by school inclusion ($\beta = .396$, $p < .001$), cognitive attitude ($\beta = .356$, $p < .001$), and age ($\beta = .207$, $p = .006$). Cognitive attitude ($R^2 = .262$, $p < .001$) was significantly predicted by social inclusion ($\beta = .395$, $p < .001$), age ($\beta = -.312$, $p < .001$), and gender ($\beta = -.257$, $p = .001$). To conclude, this study found a positive association between school inclusion and attitude toward students with IDs. Findings underscore the potential benefits of psychosocial factors focusing on social inclusion within a school-wide Special Olympics project. This emphasizes the need for delivery approaches and intervention studies aimed specifically at better effectively inclusion strategies. Future work will hopefully clarify such psychosocial growth and development, using in-depth interviewing and narrative analysis within qualitative research because it may help younger participants reveal their actual perspectives on inclusion, their experiences, and any changes they perceive in themselves as a result of their involvement in an inclusively educational context.

Impact of dual-authority leadership on mental toughness: the mediating role of cognitive and affective trust

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ABSTRACT

Mental toughness is an essential psychological ability for athletes. Mental toughness is related with confidence, concentration, and performance. Therefore, how to cultivate athletic mental toughness is an important issue for coaches. Practically, tough coach can cultivate tough athlete, so authority leadership behavior is employed for coaches. We proposed that coach's authority leadership was associated with athlete's mental toughness. Based on trust theory (Dirks & Ferrin, 2002), we further proposed that trust in coach is a critical variable between coach's authority behavior and athletes' mental toughness. Purpose: Based on paternalistic leadership theory and trust theory, we proposed coach Discipline-focus Authority Leadership (Discipline-AL) and Dominance-focus Authority Leadership (Dominance-AL) have positive and negative associations with athletes' mental toughness. Besides, trust in coach (cognition-based-trust and affect-based trust) mediated the relationship between Discipline-AL and mental toughness; so as Dominance-AL and mental toughness. Methods: Data collected from 398 competitive senior high school basketball players. Path analysis with bootstrapping techniques was used to analyze data. Results: Results revealed that Discipline-AL was positively associated with mental toughness, whereas Dominance-AL was negatively associated with mental toughness. Cognitive and affective trust in coach was fully mediated between Discipline-AL and mental toughness, and Dominance-AL and mental toughness.

KEYWORDS

discipline-AL leadership; dominance-AL leadership; trust in coach; resilience

Conclusion: The findings provide fruitful implications to both practitioners and academicians, in that there is the opposite pathways of Discipline-AL and Dominance-AL on athlete's mental toughness. The mediating effect of cognitive and affective trust in coach suggests in order to enhancing athletes' mental toughness, coaches need to win athlete's trust, and then the Discipline-AL will be functioning. On the other hand, the Dominance-AL will decrease athlete's mental toughness, though athlete's mental toughness will enhance by trust in coach.

Characters in search of an author: a delphi study of sport psychology professionals' conceptualization and experience of professional identity

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ABSTRACT

To ensure public safety, duty of care, and professional advancement, there is a need to consider the competence, ethical practice, and well-being of sport psychology professionals (SPPs). While there have been recent attempts to develop standards for practitioner competence, research examining other factors impacting the experiences of SPPs, such as ethical practice, well-being, and professional identity, remains scarce. The establishment of a strong professional identity SPPs has the potential to increase the likelihood of ethical working, awareness of professional roles, and support of a more effective and lasting career. Nevertheless, there is currently no consensus regarding a definition of sport psychology professional identity (SPPI). As such, the present study aimed to address this gap in the literature and extend knowledge regarding how SPPs define SPPI and what are the elements encompassed in it. A multinational panel of 41 SPPs from 6 different continents, were invited to participate in a 3-phase Delphi study. Participants were recruited based on their applied experience and the focus of their scholar activity. As group, the panelist reported sharing their time between their academic (41.93%), applied (39.27%), and administrative (18.8%) practices, with an average professional experience of 16 years ($SD_{years} = 9.1$). The majority of these participants (60%) reported to be legally allowed to practice psychology in their country and 72.5% held sport psychology specific credentials. During round one participants were invited to outline their personal definition of SPPI and to indicate how they developed a SPPI and what elements contributed or hindered this development. Working within a critical realism ontology and a social constructivist epistemology, we developed a working definition of SPPI and a list of elements supporting ($n = 13$) or hindering ($n = 11$) its development, along with their definitions. Then, we invited the panelists to rate some characteristics of definition according to its clarity ($M = 3.80$, $SD =$

KEYWORDS

Professional formation;
Professional development;
Professional training;
Effective practice; Ethical
practice

0.71), representativeness ($M = 3.78$, $SD = 0.72$), importance ($M = 4.32$, $SD = 0.72$), and usefulness ($M = 4.09$, $SD = 0.7$). Finally, panelists were also asked to share their personal perception of the relevance of each of the components fostering the development of a strong SPPI, as well as the perceived impact that each hindering factor may have against the development of SPPI. The implications for individuals and societies are discussed in relation to professional development and training, wellbeing, and ethical and effective practice.

Impact of the Covid-19 pandemic on athletes belonging to the japan professional basketball league

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ABSTRACT

The coronavirus disease of 2019 (COVID-19) pandemic has led to dramatic changes in the sports environment (Grix, Brannagan, Grimes, & Neville, 2021). One representative international example is the delay until 2021 of the 2020 Olympics and Paralympics. Domestic examples in Japan include suspension of the Nippon Professional Baseball Organization, Japan Professional Football League, and Japan Professional Basketball League. Moreover, athletes have had to play matches with no or limited spectators, which might have impacted their self-efficacy and motivation significantly. This study thus aims to evaluate the changes in athletes' self-efficacy and motivation in the pre- and post-COVID-19 seasons. A total of 28 participants were chosen from three different teams in the Japan Professional Basketball League. The Sport Motivation Scale Questionnaire and Psychological Performance SE Scale were used to investigate the effects of COVID-19 on athletes. The results showed that participants in each team had different reactions from the other two teams. Regarding the characteristics of Team A, the athletes' reactions were mixed: out of the nine post-COVID-19 motivation scores, four were higher, two were lower, and three showed no change compared with the pre-COVID-19 season. Also, out of the nine post-COVID-19 self-efficacy scores, two were higher, one was lower, and six showed no change compared with the pre-COVID-19 season. These mean that no significant difference was found. Team B showed positive reactions even under the crisis: on the whole, motivation scores between the pre- and post-COVID-19 seasons indicated an increasing trend and self-efficacy scores were significantly higher. However, Team C showed negative reactions under the same situation. That is to say, its overall results for both motivation and self-efficacy scores between the pre- and post-COVID-19 seasons showed declining trends, which means that no significant difference was found. In conclusion, even though the COVID-19 pandemic is an unprecedented incident that has brought instability in people's lives, professional athletes demonstrated differing potential in their reactions to this

KEYWORDS

COVID-19; professional athletes; motivation; self-efficacy

unexpected and unsafe situation. They also experienced how to take the crisis in different ways. They likely tried to find new motivations according to the change in the circumstances. Moreover, the change in the league teams' approach from the normal situation to provide team support and create a secure environment might have affected the athletes in positive ways.

Psychological skills for football players as important part of their life skills

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ABSTRACT

The psychological skills of athletes at different qualification levels is a very popular research issue with sports psychologists around the world. Well-developed physical, tactical and technical skills are necessary, but not sufficient for success in modern football. Research indicates that the most successful athletes consistently require and apply psychological skills to enhance performance. The research of the life skills development through sport participation in general and football in particular shows that life skills can be developed through football participation (Goudl & Westfall, 2014). There are a lot of life skills (communication skills, integrity, emotional regulation at al.) which unite psychological and social skills. The aim of the present research is: 1) to investigate psychological skills of Latvian highly qualified football players; 2) to identify the psychological skills that affect the players' game efficiency; 3) to develop psychological skills inventory for football players; 4) to research how psychological skills can be used to develop life skills football players. Expert interviews with the Latvian Football Federation representatives, Latvian Higher League coaches and experienced football players have enabled the researchers to identify 11 most essential psychological skills. To measure a football player's efficiency the method of expert assessment was applied. The research population were 158 male football players from six First - Division teams 18-35 years of age, from Latvian Olympic, National and Second-Division football teams. A questionnaire has been worked out to measure the intensity of these skills in football players. Decision making, communication, emotion control, attention concentration and automaticity skills have demonstrated a strong statistically significant correlation with game efficiency of highly qualified football players. The psychological skills inventory for football players can be used by trainers and psychologists to obtain objective and relevant information. Identifying the individual characteristics of players, in particular, the level of development of their psychological skills, will allow you to plan and purposefully develop the actual qualities of football players. These psychological skills can be used to help players develop life skills and will transfer to off-the-field life situations. This is becoming especially relevant during and after the COVID-19 pandemic.

KEYWORDS

football; psychological skills; life skills

Toward an understanding of psychological well-being among the coach-athlete-sport and exercise psychology practitioner triad

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ABSTRACT

Psychological well-being (PWB) is a pillar in global policy and holds important ramifications for health and performance, especially within the high stakes realm of performance sport. Recent United Kingdom governmental white papers, such as the duty of care report from the Department for Digital, Culture, Media and Sport, has led to uncertainty regarding whether the PWB, welfare, and safety of individuals in performance sport are given the priority and consideration they deserve. Despite this perturbing insight and previous relevant sport psychology enquiry, little is understood about PWB within and among athletes, coaches, and support staff. In particular, beyond an individual lens, there is a dearth of research that explores the interpersonal nature of PWB in the coach-athlete-SEPP triad. In this presentation, we will share novel insight that explores the individual and interpersonal meanings, antecedents, and outcomes of PWB within the coach-athlete-SEPP triad. We will also highlight key resources and strategies that can be used to maintain and bolster individual and interpersonal PWB. Underpinned by an interpretative paradigm and a social constructionist epistemology, we conducted individual and triadic interview methods with three coach-athlete-SEPP triads ($n = 12$, > 18 years of age) who were working within individual sports (e.g., athletics). We analysed data using abductive reasoning during reflexive thematic analysis. We found various factors that nourished and malnourished individual PWB among athletes, coaches, and practitioners, including: personal (e.g., prior experience), situational (e.g., controllability), social (e.g., relationship quality), behavioural (e.g., responses to others), and organizational (e.g., culture) factors. In addition, interpersonal well-being within the triads was influenced by relationship (e.g., dynamics), personal (e.g., openness), organizational (e.g., psychological safety), and situational (e.g., uncertainty) factors. Our findings also highlight that PWB can be transferred via a range of interpersonal mechanisms (e.g., interpersonal coping, emotional contagion, and social appraisal). Key strategies and resources, such as mutual sharing, individually tailored support packages, and cultivating environments where relationship can flourish, were identified by the participants as ways to protect, maintain, and bolster PWB. These findings implicate several recommendations for researchers, practitioners, and stakeholders. First, we recommend that researchers continue to develop interpersonal understanding of PWB in sport to generate a broader evidence base. In addition, we encourage sport organizations to consider how interventions (e.g., mentoring) can be tailored to augment and manage individual and interpersonal PWB among those at the front lines of sport.

KEYWORDS

Eudaimonia; Hedonia;
Performance Sport; Triadic;
Welfare

New birth or lost in Covid-19

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ABSTRACT

Whole world is experiencing the transition due to Covid-19. Pandemic, a situation of global crisis from which our sportspersons are affected too. The purpose of this paper is an effort to dwell on crisis and finding opportunity out of current situation. Since, many are getting lost because of various challenges but new birth is need of time as we all experience in life that necessity is the mother of invention. This systematic review paper will go deep dive and disclose the grey literature as well as currently available preventive measures and interventions which can be utilized for human well-being. Mental Health is highly dynamic in nature as every individuals human experiences are different. Sportspersons are encountering various mental health issues as well. Prevalence of subclinical mental illnesses has had increased. Various concerns are arousing such as generalized anxiety, depression, boredom, stress. An effectiveness can only be bring when an individual will be in the state of well-being to understand true potential, develop coping skills and working productively. A significant gap can also be filled by finding the gap analysis between current situation and demand. Moreover, an organic approach will be substantial in personal growth. Social distancing gives opportunity to interact virtually where sport psychology consultants can educate and help them in keeping a schedule, limiting screen usage, mindfulness, resilience, introspecting creativity with respect to sport specific and in general. Developing competencies, learning new things, and finding out possibilities in this transitional period. A chance for sport psychology consultant of spreading preventive measures and developing intervention techniques. This concludes that sportspersons can give new birth to their life or journey and strive for career excellence by this they will also uplift others especially those who lost their hope, and live a balanced life. This will not only make them to do for their necessity but also raise above them such bloody barrier, make them internally more competent and confident externally. This will develop a supporting environment for them and develop a insight within that with healthy behaviour they can live a healthy life.

KEYWORDS

Covid-19; Well-being; Mental Health; Organic Approach; Prevention and Intervention

Explore the coping strategies of thailand's competitive sailors

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ABSTRACT

The study of coping strategies in elite requires more information with a specific context in order to understand both the theory and the application in various setting such as in Thailand has a same specific content or different with past research. This study

KEYWORDS

coping strategies; superstitious in sport; rituals in sport

explores the coping strategies of members of the Thai national sailing team. The samples were 19 sailors from the Thailand national team who were preparing for the international event. The qualitative research technique was used to collect the phenomenological data through interviews. Data analysis was used to compare data stability. To summarize a topic related to the research question. The data consistency was consisted 3 steps: reading the data to find the subject or golden phrase, arrange subject heading by grouping, and bringing the data into groups properly. The results found that eight specific "coping strategies" were applied for use in preparing for competitions, including these 6 coping strategies: (1) strictly keeping to daily routines as "try to stay with their daily activities early in the morning and pray", (2) setting aside leisure time as "help them free and give a chance to enjoy life", (3), staying focused on the task at hand as "try to maintain on their standards", (4) releasing stress as "shouting, jumping into the sea, complaining, smashing the boat and crying", (5) relying on social support "talk with significant others", (6) reflecting on past training as "remind what to do for", but 2 technique was unique as (7) performing superstitious rituals as "make merit, worshiping the monk or superstition to make mental energy" and (8) acting with mindfulness as "helps athletes to be aware in thoughts, feelings and emotion". In conclusion, the Techniques for dealing with stress did not use only one method for efficient benefits. Thailand believes in guardian spirit to make mental energy and use Buddhist way to reset the mind and increase focus, awareness, and concentration on the breath. Instead, the sailors needed diverse techniques depending on the situation, their familiarity with the experience, and their personal beliefs and preferences. Moreover, the coping strategies are not specific in one form but depend on the technique being used and the degree of their satisfaction with it, particularly if they won or were successful as a result. In this case, they are likely to use that technique again.

Conceptualising cultural leadership in physical education and youth sport: an outline for a pedagogical concept

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ABSTRACT

The coach and the teacher are central to developing and maintaining the culture of the sports team or the class - we claim that they can be seen as cultural leaders. Acting as a cultural leader involves more than the specific planning of the training or the class in terms of purpose, content and methods. However, the concept of cultural leadership has received only scant attention in literature concerned with the role of coaches and teachers. The aim of this poster is to establish, describe and illustrate the relevance of cultural leadership by asking What is cultural leadership in PE and youth sport? In this study, we

KEYWORDS

holistic ecological approach; critical pedagogy; context-driven sport psychology; teacher education; coach education

outlined key existing research that is relevant to this area and which may inform the conceptualization of cultural leadership. A preliminary search and a systematic mapping of the literature were undertaken to identify whether a full systematic review was feasible. However, little relevant literature existed, and therefore the systematic literature review (Xiao & Watson, 2017) was discarded as a suitable method. A scoping review (Arksey & O'Malley, 2005) was then tested. Following the scoping review guidelines, we did retrieve a few relevant papers. Subsequently, we used a heuristic approach, which involved creatively forming our various inputs from the literature and repeatedly discussing and revising the different ideas derived thereby. We present certain tendencies in the literature of PE and youth sport that can provide the grounds to stimulate reflection, inform practice and lead to future development of research and practice. The poster proposes five cultural leadership actions that we see in the literature: (i) Designing purposeful practice, (ii) Managing inclusion and heterogeneity, (iii) Acting as a role model, (iv) Creating a motivational climate, and (v) Communicating values and paying attention to discourses. As a cultural leader the coach and the teacher make a substantial impact on the cultural values that are (re)produced in the context in which they are operating. The notion of cultural leadership is the leadership through primary and secondary cultural embedding mechanisms which maintain, develop and create values and norms in a group of learners (i.e., athletes or pupils). PE and youth sport are practices constructed across a broad range of social, cultural and political contexts, which, additionally, require coaches and teachers to understand the constitutive effects of the many different interacting sociocultural factors.

The impact of the Covid-19 pandemic on hong kong athletes transitioning to senior

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ABSTRACT

The novel Coronavirus Disease-2019 (COVID-19) pandemic is a big challenging situation for every athletes with potential impacts on their lives and career trajectories. While many athletes might be negatively affected by the situation, others might perceive it positively. And specific career contextual conditions may influence the athletes' perceptions of and reactions to this unique situation. This is a qualitative study and aimed to explore the impact of the COVID-19 pandemic on the experiences and perceptions of Hong Kong athletes that were transitioning to senior in their sport career. Fourteen athletes (Mage = 20.14, SDage = 1.51; females = 6, males = 8) from different elite sports (e.g., Skating, Rowing, Table Tennis) of the Hong Kong Sports Institute (HKS) were recruited as participants. All 14 athletes were aged from 18 to 22, and were combining sport, education or

KEYWORDS

COVID-19; qualitative study; athletes transitioning to senior; experiences; perceptions

vocational training. A semi-structure one-to-one interview was conducted for every athlete, respectively. Each interview lasted about 30 to 45 minutes, and was audiotaped and transcribed verbatim with the athlete's permission. Then, all interview transcripts were analyzed by thematic analysis. Through the thematic analysis, three general dimensions were generated, in terms of (a) Changed Environment [two higher order themes: Negative Changes (i.e., Destroyed training, Destroyed competition, Closed training camp, and Destroyed study); Positive Changes (i.e., More free time, Less stressed training and competition, and Better interpersonal relationships)]; (b) Shifting Feelings and Emotions [three higher order themes: Beginning Stage (i.e., Anxious, Unsatisfied, Confused, Feared, and Happy); Middle Stage (i.e., Lost, Lonely, Depressed, and Sad); Later Stage (i.e., Moderate and Hopeful)]; (c) Reactions Chosen [two higher order themes: Negative Reactions (i.e., Avoid, Indulgence, and Inefficient on-line study); Positive Reactions (i.e., Seek professional support, Adapt focus, Self-reflect, Get ready for future, Care others, Self-direct training, and Take up new hobbies)]. The COVID-19 pandemic as a longitudinal, multifaceted, unpredicted, non-controlled change-event undoubtedly brought unfavorable impacts on athletes' development. Nonetheless, for most of the interviewed athletes from Hong Kong, who were transitioning to senior, this change-event seems to be also a catalyst to promote the athletes' growth and development (especially mental growth). And most of the athletes could finally adapt to the pandemic situation and be hopeful for the future.

Relationships between beliefs about failure, regulatory focus, and emotion after performance failure

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ABSTRACT

Beliefs about failure comprise four factors: the negative affective valence of failure, the learning orientation, the need to avoid failure, and the perceived probability of occurrence of failure (Ikeda & Misawa, 2012). Regulatory focus is classified into promotion focus, which focuses on success, and prevention focus, which focuses on failure (Higgins, 1998). However, no research thus far has examined the relationship between beliefs about failure and regulatory focus. The amount of negative emotion evoked after failing to perform a motor task has also yet to be determined. The purpose of this study was therefore to examine the relationships between beliefs about failure, regulation focus, and emotional valence after performance failure. Twenty-nine participants (Mage = 20.62 years, SD = ± 1.42) performed a golf putting task for 100 acquisition trials followed by 10 test trials. The size of the test target was determined for each participant so that the failure rate was about 50%, based on the last half of acquisition trials. After every trial, in the test, participants

KEYWORDS

beliefs about failure; golf putting; anxiety

answered questions from a visual analog scale regarding positive/negative emotions evoked by the result of the previous trial, as well as anxiety in anticipation of the next trial. Beliefs about failure were assessed using a questionnaire formulated by Ikeda & Misawa (2012), and regulatory focus was assessed using the Japanese version of the promotion/prevention focus scale (Ozaki & Karasawa, 2011). Prevention focus was found to have positive relationships with the negative affective valence ($r = .627$, $p < .001$) and the need to avoid failure ($r = .795$, $p < .001$). To investigate the relationship between prevention focus and emotional valence after performance failure, the participants with high ($N = 19$) and low ($N = 10$) prevention focus scores were compared by an independent t-test. After the performance failure, the high-score group had significantly stronger negative emotion ($t(27) = 2.321$, $p = .028$, $d = 0.907$) and higher anxious feelings for the next trial ($t(27) = 2.575$, $p = .016$, $d = 1.006$) than the low-score group. In summary, these results demonstrated a relationship between negative beliefs about failure and prevention focus, as well as a relationship between prevention focus and negative emotional valence and anxiety due to performance failure.

The harmful effects of sedentary behavior on adolescent health: an overview of systematic reviews and meta-analyses

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ABSTRACT

Introduction: Adolescents spend more time engaging in sedentary behavior in recent years, such as reading, doing homework, using smartphones, tablets/PC games, and watching TV. Moreover, during the COVID-19 pandemic, online learning increases screen time for adolescents, inevitably resulting in more screen-based sedentary behaviors. Previous research has indicated that excessive sedentary time is harmful to health, for example, higher risks in obesity, cardiovascular disease, or depression. However, few studies have overviewed the influence of sedentary behavior on both physical and mental health in adolescents. The aim of the current study is to better understand the relationships between sedentary behaviors and health in adolescents by reviewing previous systematic reviews or meta-analyses. **Methods:** Several English and Chinese electronic databases were utilized for searching our target articles. Eighteen systematic reviews or meta-analyses met the criteria for reporting the associations between sedentary behavior and health outcomes in adolescents. **Results:** Adolescents spent more time in sedentary behavior, especially screen-based sedentary behavior. A higher amount of sedentary time was associated with higher risks of several physical and mental disorders. The harmful effects of sedentary behavior were primarily reported in adolescents on the following

KEYWORDS

sedentary behavior; screen-based sedentary behavior; health; adolescents

health outcomes: “body composition, overweight, & obesity,” “cardiovascular & metabolic diseases,” “fitness,” “self-esteem,” “depression,” and “psychological well-being.” Further, we discussed the methods of measuring sedentary behaviors and the underlying mechanism of sedentary behavior to explore the causes of potential harm. Conclusion: Excessive sedentary time could have severe consequences on adolescent health. Future research examining the associations of sedentariness with health outcomes in youth is suggested to utilize both self-reported and device-based measures of sedentary behaviors. More well-designed interventions or large-scale prospective cohort studies are needed to clarify the complex associations between sedentary behaviors and health among adolescents.

Effects of postures and movements on psychological and physiological states

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ABSTRACT

Various postures, including high and low power poses, lead to various psychological and physiological states (e.g., Carney et al., 2010). However, the influence of sitting and standing postures on psychological states was relatively low in Takayama & Sekiya’s (2019) study. It is expected that movements produce greater psychological effects. Therefore, this study investigated the effects of various postures and movements on psychological and physiological states. Fourteen participants ($M_{age} = 20.64 \pm 1.15$) performed six postures and six movements, which were predicted to produce high-arousal negative (HAN), high-arousal and positive (HAP), low-arousal negative (LAN), and low-arousal positive (LAP) emotions, based on the two-dimensional theory of emotion (Russell, 1980). Participants performed the postures and movements for 1 minute each, followed by a 2-minute rest. Psychological arousal and valence were measured using the Two-Dimensional Mood Scale (TDMS; Sakairi et al., 2013). Heart rate (HR) was measured as an index of physiological arousal. A dimension (2) \times posture/movement (12) ANOVA for TDMS scores revealed a significant interaction effect ($F(11, 143) = 18.80, p < .001, \text{partial } \eta^2 = .59$). Walking movements with stepping frequencies of 100 bpm or greater, predicted to produce HAP and HAN emotions, led to higher arousal than many other postures ($ps < .05$), and a supine posture, predicted to produce LAP emotions, led to lower arousal than all other postures and movements ($ps < .05$). Moreover, a skipping movement predicted to produce HAP emotions led to more positive emotions than postures predicted to produce negative emotions ($ps < .05$). One-way ANOVA for HR revealed a significant main effect of posture/movement ($F(4.12, 53.56) = 39.14, p < .001, \text{partial } \eta^2 = .75$). Long stride walking (140 bpm) with both hands placed on the head and a skipping movement had significantly higher HR than

KEYWORDS

posture; movement; arousal; valence; heart rate

postures and movements predicted to produce low arousal ($ps < .05$), and the supine posture had significantly lower HR than postures and movements predicted to produce high arousal ($ps < .05$). A one-sample t-test comparing TDMS scores to 0 revealed that some movements produced significantly high arousal whereas other postures and movements produced significantly low arousal. Additionally, some postures and movements produced significantly high positive emotions ($ps < .05$). These postures and movements were further classified into five types based on psychological arousal and/or valence: HAP movement, LAP posture, positive posture/movement, high arousal movement, and low arousal posture/movement. Therefore, this study determined that many postures and movements were effective in altering psychological and physiological states, with movements more effective in producing high arousal and positive emotions than postures.

Self-formation process of adolescents attempting symbolic interpretation of physical activity

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ABSTRACT

The well-known identity formation in adolescents can be described as a process of self-formation in analytical psychology. The self is the wholeness of the mind, including the conscious and unconscious, which can be understood through symbolic interpretations, such as the integration of masculinity and femininity. In addition, there is a position in Japan that considers the experienced body as a symbol of the wholeness of the self as an integration of the mind and the body (mind-body unity) by considering the mind as consciousness and the body as unconsciousness (Takeda, 2021). This position has been adopted in psychological support for Japanese athletes. It is argued that by listening carefully to the athlete's performance, that is, the body as they experience it, we can understand their mind-body unity, and this will lead to their maturation as individuals through sport. This indicates that by actively engaging with one's own body, they are able to proactively confront developmental issues. Therefore, it is expected that adolescents who have formed their ego to a certain extent will pay attention to their bodies and reflect on their own activities, which will lead to the transformation of their higher self through overcoming psychological challenges. In this study, we focus on the case of a male university student with athletic experience who engaged in agricultural work. The purpose of this study is to interpret the bodily experience of farming through symbolic interpretation based on analytical psychology, and especially to decipher the process of self-formation through the conflict between paternity and maternity. Studies on First-Person's View and the

KEYWORDS

self-formation; mind-body unity; experienced body; Clinical Sport Psychology in Japan

methodologies of Japan's Shinri-rinsho were used to gain insights into the subject's experiences. One subject were asked to narratively describe their upbringing and their physical experiences in agricultural work during their four years of college. The researcher and the subject read the material together, delving more deeply into the subject's experience and adding depth to the material. In the process of reflection, the key concepts were cutting crops as a paternal function and watching over crops as a maternal function. The symbolic interpretation of the bodily experience gave new meaning to the subject's experience and created a situation in which the subject was deeply engaged internally with adolescent issues. (Details will be provided in the poster presentation). In conclusion, this study shows that paying attention to bodily experiences promotes "awareness of the unconscious," which in turn constructs a higher self.

The effect of emotion regulation in the influence of physical exercises on the subjective well-being of college students

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ABSTRACT

Introduction[?]With the introduction and development of positive psychology in China, more and more scholars are paying attention to how to improve the subjective well-being of the citizens, so that the citizens have a better life experience and a good psychological atmosphere. The group of college students is the most powerful and hopeful group among the country's citizens, and it is the builder of society. Improving the subjective well-being of college students is not only beneficial to the group of college students, it is also of great benefit to society. Purpose: The purpose of this study is to study the relationship between physical exercise and subjective well-being of college students, and to explore the role of physical emotion regulation in the influence of physical exercise on subjective well-being of college students. This article attempts to study whether emotional regulation plays an important role in the effect of physical exercise on subjective well-being. At the same time, it also provides a new explanation for the effect of physical exercise on subjective well-being, so as to better apply the improvement of individual well-being to in daily life. Methods: 204 college students were measured by physical activity rating scale, emotion regulation questionnaire (ERQ) and subjective well-being scale. SPSS 23.00 software was used for data statistics and analysis. Results :(1) There was a positive correlation between physical exercise and subjective well-being in all dimensions, and the regression analysis showed that physical exercise had a predictive effect on subjective well-being. The prediction validity was 73.8%. (2) Physical exercise has a predictive effect on emotional regulation, which is up to 69.4%. (3) the emotion regulation as a

KEYWORDS

Physical exercise; Subjective well-being; Emotional regulation; College students; A4-009

part of the intermediate variable between physical exercise and subjective well-being play a regulatory role. Conclusion: Physical exercise has a positive prediction effect on subjective well-being of college students; The prediction effect of physical exercise on subjective well-being is mediated by emotion regulation. It is suggested that universities should pay attention to strengthening students' physical exercise, organize various forms of physical exercise, and set up mental health education courses that need to focus on the content of emotional control, effectively improve students' ability of emotion regulation, and further enhance students' subjective well-being.

Clinical-sports psychological intervention in elite karate fighter of ecuador during the Covid-19 pandemic. case study.

Leonardo Eliecer Tarqui Silva

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ABSTRACT

Introduction: this research is about a case study in high-performance sport psychology, in the discipline of karate, the participant was a 15-year-old female adolescent, a South American champion by category and belonging to the Project "Young Promises" sponsored by the Ecuadorian Olympic Committee (COE). The psychological approach included a clinical-family evaluation stage, later a sports psychodiagnostic phase, and in parallel a specific mental training planning was applied for the athlete, this during the Covid-19 health crisis. Purpose: the main objectives of the intervention were to evaluate the psycho-affective state of the participant, her family situation and the impact it generates on the athlete, emphasizing this aspect when dealing with a minor. Subsequently, specific sports psychological tests were applied, and a mental preparation program was included for the strengthening and empowerment in the management of mental strategies, whose purpose was aimed at stimulating their future sports performance. Methods: in the first instance due to ethical situations, the athlete was asked to sign the informed consent and authorization of her parents. The psychological program lasted six months, with virtual sessions of approximately 50 minutes, every 5 days, due to the global pandemic crisis. In the clinical area, the anamnesis, HTP Test, The Family, Man Under the Rain, SEAPSI and Salamanca were recorded. At the sports level, the following psychological tests were applied: POMS, CPDR, Ways of Coping Checklist, CSAI-2 and STAXI-2. Within the mental training program, the following areas were addressed: goal setting, visualization, self-dialogue, management of breathing and relaxation techniques, control of attentional focuses and regulation of activation levels. Results: within the personal analysis, a total disposition of the athlete and high levels of resilience was found, there were no problems that deserve attention. In this specific case, the family was a primary

KEYWORDS

program; clinical-sports; pandemic; karate; case study

pillar for the participant's emotional stability and motivation. At the sporting level, the karate fighter's cognitive capacity and her ability to assimilate the intervention program stand out, obtaining total compliance with the planning. Conclusion: sports psychological intervention is more effective at an early age due to the disposition of the athletes. The intellectual and cultural capacity facilitate the learning processes of mental strategies. Family balance is crucial during the stages of evolution of competitive athletes.

Train and measure attention in football with the powermens methodology

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ABSTRACT

Background: In the field of Sports Psychology, the use of biofeedback (BFB) is becoming more and more frequent and is a non-invasive experimental procedure that allows a person to regulate their psychobiological functions and help to become aware of internal processes that are not typically controlled. consciously. Galvanic Skin Response (GSR) is one of the most used methods in psychophysiology, together with the study of heart rate variability (HRV) it is a valid approach to help athletes regulate and deal with the stress of competition and improve neuromuscular function. On the basis of this, a new method was devised, PowerMens, which for the first time investigates these concepts integrated with specific training on the visual attention of the players. **Purpose:** The aim of this research was to examine the effects on athletes of high pressure activities determined by visual attention tasks that cause an attentional and cognitive load, and how athletes have learned to self-regulate by promoting body homeostasis to in the face of stressful events. **Method:** Subjects were 20 professional youth soccer players, 10 from the experimental group and 10 from the control group. The research was conducted in three phases: pre-test, training, and post-test. The pre- and post-test consisted of a high-stress attention task to which the players were subjected. The experimental group conducted the BFB PowerMens training which consists of the integration of the BFB with Mental Games and promotes the control of the level of arousal and the restoration of homeostasis following games that cause psychophysiological changes., while the control group conducted mental training. Paired, independent two-sample t-tests were used to analyze the data. **Results:** The results of this research showed in the experimental group a greater capacity for cognitive and emotional self-regulation and adaptability to stressful tasks, specifically the capacity and efficiency in returning to homeostasis after an attention load (GSR $t(9) = 4.54$, $p = 0.001$; HRV $t(9) = 2.92$, $p = 0.017$), and the time improvement in performance in visual selective attention exercises ($t(9) = 1.94$, p

KEYWORDS

Biofeedback; Performance;
Mental Games; PowerMens;
Football

= 0.042). Discussion / Conclusions: The results described suggest that the new PowerMens method, tested in this study for the first time, improved the capacity of self-regulation and adaptability to stressful tasks and the interaction between vegetative and cognitive functions in the experimental group. However, despite being an encouraging preliminary study, it could open important frontiers in the football sporting context.

Inferiority complex seen as a like or dislike and adaptation to physical education classes in junior high school students

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ABSTRACT

Introduction: In recent years, it has become important to deepen understandings of students who show an avoidant attitude in physical education classes in Japan. Consequently, it is crucial to understand the characteristics of such students. The purpose of this study was to examine the associations among presence of inferiority complex regarding physical education classes, physical education adaptation, and like or dislike of physical education classes in junior high school students. **Methods:** The study sample comprised 708 Japanese junior high school students (men = 371, women = 337, mean age = 13.92 ± .89) who exhibited no gaps in their responses to the questionnaire and were included in the analysis. Measures included the following: an inferiority complex regarding physical education class scale (complex focused on motor skills and a complex focused on psychosocial and physical factors, causing feelings of inferiority to develop into an inferiority complex) developed by Sasaki and Suko (2016)—a scale that assessed whether participants liked or disliked physical education classes—and an adjustment to physical education class scale (intention of solidarity and adjustment to physical education classes) developed by Sasaki (2003). Next, based on adjustment to physical education classes scale two subscales score, the students were classified into four types: “solidarity—adjustment” (first type), “peer interaction—maladjustment” (second type), “avoiding unity—maladjustment” (third type), and “at-one’s-own-pace—adjustment” (fourth type). Two-way analysis of a variance test was conducted along the inferiority complex subscale (with the scores of each subscale treated as a dependent variable), with the adjustment to physical education classes of the four types and likes and dislikes of physical education classes acted as independent variables. **Results:** Two-way analysis of variance showed the first factor of the inferiority complex scale—which focuses on motor skills—affected the students “like or dislike of physical education classes,” along with their “adjustment to physical education classes four types of students”, respectively. Next, the second factor of the inferiority complex scale—psychosocial and physical factors—showed an interaction

KEYWORDS

avoidant attitude; like or dislike of physical education classes; junior high school students

between “adjustment to physical education classes four types of students” and “like or dislike of physical education classes.” Conclusion: To understand the characteristics of students with inferiority complex regarding physical education classes, focus should be placed on adjustment to physical education and their like or dislike of physical education classes.

Measuring implicit favorable attitudes toward corporal punishment in sports using the single-target implicit association test

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ABSTRACT

The tendency of a certain proportion of people to have favorable attitudes toward corporal punishment in sports has been reported by previous studies (e.g., Hagiwara & Wolfson, 2013) and also confirmed in a very recent study (e.g., Uchida, Teraguchi, & Daiku, 2020). However, most of these studies have depended on self-report questionnaires, which owing to the influence of social desirability, may have underestimated the true proportion of people supporting it. By contrast, the Single-Target Implicit Association Test (ST-IAT; Bluemke & Friese, 2008; de Liver, van der Pligt, & Wigboldus, 2007) indirectly measures how strongly participants associate corporal punishment in sports—smacking and punching—with positive and negative words. This study’s purpose was to examine whether the ST-IAT, as a method for avoiding self-reports, could implicitly measure favorable attitudes toward corporal punishment in sports. To measure generally favorable attitudes, a self-report questionnaire was administered to 39 men and women who participated in this study. They were then asked to watch documentary footage that portrayed examples of corporal punishment during sports activities. Thereafter, their implicit and explicit favorable attitudes toward the footage were measured using the ST-IAT and a self-report questionnaire, respectively. These results showed that the participants’ implicit favorable attitudes were positively correlated with their generally favorable attitudes ($r = .380$, $p = .017$) and their explicit favorable attitudes toward the footage ($r = .366$, $p = .047$), both of which were measured using these self-report questionnaires. These results indicated that the ST-IAT could be applied in measuring implicit favorable attitudes toward corporal punishment in sports. Thus, it was considered a useful tool for appropriately measuring favorable attitudes toward corporal punishment in sports, even in experimental conditions where the influence of social desirability is likely to increase. However, given that the correlation coefficients were moderately strong, the implicit favorable attitudes measured by the ST-IAT may have been an assessment of different aspects of the explicit favorable attitudes toward corporal punishment. Hence, future research is

KEYWORDS

attitudes; corporal punishment; sport coaching

required to examine the validity of implicit favorable attitudes toward corporal punishment in sports assessed by the ST-IAT, focusing on the relationship with indicators—behavioral and physiological—that do not rely on self-reports.

Theoretical and research tendencies in the psychology of physical activity and sport in Ibero-America

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ABSTRACT

The psychology of physical activity and sport field investigation in Ibero-America has definitely increased. Therefore, a research was done whose general objective was to review the theoretical and research trends in this field. The research was qualitative, hermeneutical-comprehensive. The analysis unit was compounded of 20 articles from Ibero-American journals indexed in Scopus in 2016 and 2017. This selection was made based on some criteria such as: Psychology journals indexed in Scopus in those years, in the categories of Applied Psychology and Miscellaneous at the Ibero-American level, using descriptors such as: Sport and Physical Activity in the title, abstract and keywords. For its analysis, a rubric was used, which allowed us systematizing the bibliometric information of the article, its authors and cited texts, and the keywords. In addition, the discussion points and theoretical proposals presented in those articles, classified into thirteen categories, such as: Benefits, Technical Quality in Objective Tests, Competence or Competition, Physical Culture, Sports, Emotional Status, Strategies, Population groups and genders, Life Skills, Intervention Interests, Quantitative Research, Motivation and Relationship. Besides, these categories allowed identifying the interests of authors in certain topics, as well as, highlighting some validation possibilities or transcultural adaptation of psychological testing and intervention to and from different areas, as well as the creation of new theories and trends that were evidenced in this review process, including the use of the scientific method from different research perspectives. Due to the above and from the corpus used in this research, it is evident that there are various topics of interest in the psychology of physical activity and sport that reflect the investigative activity in this field, taking into account that some topics are more complex than others.

KEYWORDS

Sports psychology; Physical activity; Exercise psychology; Ibero-America

Can the coach-athlete attachment relationship mediated by the coach's leadership style impact the mental toughness of athletes in the world beach volleyball context?

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ABSTRACT

The sports coach plays an important role in the emotional and psychological development of the athlete through their daily interactions and the way they lead the training environment. Thus, they can become an attachment figure, as the coach has the potential to develop a close bond and offer safety in times of need. Interpersonal experiences with attachment figures reflect a model of self-representation, which shapes self-image and guides an individual's patterns of cognition, affect, and behavior, as people rely on attachment experiences as a source of information to learn about themselves. In this regard, the development of psychological skills such as mental toughness, which help athletes achieve consistent performance in the presence of contextual demands, highlights the importance of the coach-athlete relationship, given that this construct can be explained as a state that varies according to situations. Thus, this study aimed to analyze the impact of the coach-athlete attachment style, mediated by the coach's leadership style, on the mental toughness of athletes in the world beach volleyball context. Elite beach volleyball athletes ($n = 65$), participants of the World Tour 2018, from events held in China, the United States and Mexico, were part of the study. The Coach-Athlete Attachment Scale (CAAS), Mental Toughness Index (MTI) and Leadership Scale for Sport (LSS) were used as instruments. Data analyses were performed in the R for Statistical Language Program, using polychoric correlation and a bias-corrected factor score path analysis. Path analysis showed that perceived secure attachment was positively associated with athletes' mental toughness (0.24; 0.31; 0.25), but leadership styles did not mediate this relationship. The perception of autocratic leadership style was associated with athletes' mental toughness (1.01; $p = 0.03$), when their interaction style is focused on coaching-instruction, indicating that, for athletes with an anxious attachment profile, the coach's decision style seems to be more strongly linked to increased mental toughness than to the interaction style. It concludes that the secure attachment relationship between coach and athlete can bring increases in levels of athletic mental toughness, whereas for athletes with insecure attachment, the autocratic style was shown to be associated with the highest levels of mental toughness.

KEYWORDS

Sport; Beach Volleyball; Athlete; Attachment; Mental Toughness

Life skills: reports of brazilian beach volleyball olympic medalists

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ABSTRACT

Introduction: Sport is considered one of the most important contexts for social, cognitive, emotional, behavioral and physical skills development, seen as fundamental characteristics for the success of an individual as a whole. When successfully transferred to other contexts of life, they will be called Life Skills. **Purpose:** To investigate beach volleyball Olympic medalists, the main life skills they have learned throughout their careers. **Methods:** Research participants: 9 athletes (3 men and 6 women) Olympic beach volleyball medalists (between 1996 and 2016). Data collection performed remotely, through the Zoom® application lasting approximately 70 minutes, conducted by an experienced researcher in the area. The semi-structured interview was developed based on the theoretical model Pierce et al. (2018), composed of pre-established questions that guided the dialogue. With the transcription carried out, the content analysis proceeded from the stages: pre-analysis, material exploration, treatment of results and interpretation. **Results:** Most athletes perceived sport as an important context for learning LS: "all these values, the sport actually gives you, [...] or improves and strengthens if you already have it", and also "I learned everything with sport, [...] it is a lifelong learning ". The main skills reported were: commitment "if you propose to do something [...] you have to be faithful to that", persistence "for me persistence is fundamental, It's hard to give up", and resilience "my story there are several moments like that ... [...] I continued, you know, and I managed to overcome it ". In addition, they mention skills such as discipline, empathy, responsibility, respect, ethics and leadership. During the interview, they prove that being able to transfer and apply the skills in other contexts of life: "the 10 values teamwork, determination, goals [...] I bring sport to my personal life, I pass it on to my students [...] in my lectures, [...] this also helps me in the area of Law and in the area of public management [...] tools that I brought from the sport and that help me until today ". **Conclusion:** In general, Olympic medalist athletes perceive the importance of sport in contributing to the development of skills that are important both for sports performance and for success in other contexts in which they operate.

KEYWORDS

Life skills; beach volleyball; olympic athletes

Systems factorial technology provides new insights on the cognitive superiority of athletes with different domains of expertise

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ABSTRACT

Introduction: Accumulating evidence has found that sports expertise may modulate the cognitive superiority in athletes, with the evidence showing greater superiority in athletes practicing interceptive sports

KEYWORDS

system factorial technology; workload capacity; athletes; sport type

relative to those practicing other sports types (e.g., strategic or static sports types). However, most previous studies made such conclusions solely by means of mean measures such as accuracy or mean reaction time (mean RT), which cannot be used to infer the individual difference in information processing efficiency. Thus, it remains to be determined whether this leads to the dismissal of crucial information associated with the cognitive difference in sports expertise. Purpose: This study aims to refine the understanding of the relationship between sports expertise and cognitive processing capacity by using a non-parametric approach (systems factorial technology, SFT), which assesses the cognitive capacity at the level of the entire RT distribution. Methods: Twenty-five male interceptive sports players (i.e., badminton, tennis, and table tennis players), 25 strategic sports players (volleyball and soccer players), and 25 gender-and health-matched controls from the general student population were recruited to participate in this study. All participants were asked to perform a discrimination-type of redundant target task, which has been commonly used to examine an individual's processing capacity of simultaneously monitoring multiple channels of information. SFT was applied to assess the workload capacity, a non-biased estimate of capacity for the redundant-signal processing. Results: Our findings showed that interceptive sports players exhibited a shorter mean RT relative to controls selectively in the single-target condition which presents distracting information, while such effects were not found for other task conditions or other group comparisons. In contrast, the results of SFT revealed that strategic sports players showed greater processing capacity in earlier responses relative to the other groups, while no other group comparisons were observed. Conclusion: Taken together, our findings suggest that the cognitive superiority of athletes with different domains of sports expertise may differ depending on different cognitive measures. We also propose that the use of SFT may provide complementary evidence regarding the relationship between cognitive superiority and sports type in athletes, which may also help to resolve some of the discrepancies in the literature relying solely on mean measures.

The sport injury lifespan and psychological sequelae model: conceptualizing a chronological biopsychosocial view of sport injury psychology

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ABSTRACT

Although a significant body of literature examines the psychological aspects of sport injuries, little describes temporal dynamics longitudinally across the full psychological process from pre-injury risk through rehabilitation, return to play, and retirement. Further, attempts to contextualize these psychological dynamics over time within broader biomedical and sociocultural systems are limited. In

KEYWORDS

psychological model; sport injury; lifespan; biopsychosocial; psychological intervention

a continued quest to integrate these temporal and interdisciplinary influences, the purpose of this paper is to overview the sport injury lifespan and psychological sequelae model as a schematic framework for conceptualizing an intersecting chronological and biopsychosocial systems view of psychological sequelae associated with sport injuries (Wiese-Bjornstal, 2019). The model was derived via evidence gleaned from multiple narrative reviews of the literature in sport injury psychology and through utilizing an inductive conceptual strategy to detect patterns and connections. The resulting model presents a systems view of two intersecting dimensions affecting psychological sequelae associated with sport injuries: injury lifespan and biopsychosocial influences. The sport injury lifespan or chronological dimension focuses on key events or transition points extending from the preinjury landscape of injury risk and prevention, through injury incidence, medical treatment and care, rehabilitation activities, and return to play or retirement processes. The biopsychosocial dimension intersects influences from biomedical, psychological, and sociocultural disciplines onto this sport injury lifespan road map. For example, physiologic tissue-damage and healing phases (Flint, 1998) ranging from healthy tissue preinjury through phases such as inflammatory tissue reaction and tissue regeneration and repair into tissue health or limitations each are associated with psychological and social implications extending into sport transition or retirement (Russell et al., 2017). Closely related sport injury health care phases illustrate a matched progression of sports medicine care from prevention through maintenance (Dhillon et al., 2017), while sport injury experiential narratives reflect changing personal meaning or interpretive story lines (Ronkainen et al., 2016) that are also affected by sociocultural influences (Wiese-Bjornstal, 2018) during these tissue healing and health care intervals. These interpretations and sociocultures influence psychological sequelae across the sport injury lifespan, such as injury recognition, acceptance, adjustment, readiness, and return (Wiese-Bjornstal et al., 1998). In conclusion, using the sport injury lifespan psychological sequelae model as a basis for integrative professional practice supports the matching of psychological skills and interventions such as pain coping or motivational imagery (Clement et al., 2015) to athletes' changing physical and psychological needs during these dynamic chronological progressions and within the biopsychosocial contexts surrounding sport injuries.

The prediction of the characteristics of mental toughness on successful weight loss in tug-of-war athletes

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ABSTRACT

The purpose of this study was to investigate the prediction of successful weight loss of tug-of-war athletes through the characteristics of mental toughness. Tug-of-war is a sport

KEYWORDS

tug-of-war; weight loss; mental toughness

practiced with weight classes based on the total weight. In order to gain better advantage on weight and power than opponents, tug-of-war athletes often lost weight rapidly before weighing and rapidly gain weight after weighing. Therefore, in addition to pursuing excellent performance, tug-of-war athletes have to, firstly, face the challenge of weight loss which might threaten health and life. Past research has found that mental toughness is an important factor affecting athletes' ability to overcome severe physical and psychological challenges. whether mental toughness influences the physical and psychological challenges faced during the process of weight loss in tug-of-war Therefore, this study aims to investigate what characteristics of mental toughness have predictive ability on successful weight loss of individuals. The participants of this study were 138 tug-of-war athletes, including 84 males and 54 females. The average age of participants is 19.8 years old (SD = 4.511, 16-46 years old). The average year of receiving specific formal training is 7.77 years (SD = 3.446, 2-26 years). As for the participation of competition level, 23 persons participate in the National Competition; 29 in Citizens Sports Games; 3 in Asian Cup; 76 in World Cup; 7 in World Games. The measurement of mental toughness characteristics is based on the Chinese version of the Competitive Sports mental toughness Scale compiled by Huang Chong-Ru (2004). The results of the study revealed that the zero-order correlation analysis indicated that successful weight loss had positive correlation from low to high degree with active struggle, stress resistance and pain tolerance.; Independent sample T test showed there are no gender differences in mental toughness; the analysis of ANOVA indicated that about the mental toughness characteristics of active struggle and pain tolerance, the World Cup tug-of-war athletes were superior to the National Competition tug-of-war athletes; Multiple regression analysis revealed that only the mental toughness characteristics of active struggle has predictive ability for individual weight loss success. The concepts and measurement of active struggle had been further investigated, including self-discipline and goal achievement. The key factors for successful weight loss in tug-of-war seem to relate to self-discipline and goal achievement. It is suggested that strategies related to self-discipline and goal achievement should be developed in the future to help tug-of-war athletes to lose their weight.

The differences in frontal F3 and F4 theta power between successful and unsuccessful golf putting of expert and amateur golfers

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ABSTRACT

Attention is considered to be one of the most critical factors for cognitive-motor performance. In the past few decades, EEG (Electroencephalography) has been used to explore the mental process of athletes during the preparation phase. Specifically, frontal theta (4-8Hz) is related to the executive function and is functionally responsible for planning and executing motor functions. Past studies have demonstrated that there is functional asymmetry of cerebral hemispheres, where the left frontal (F3) plays a leading role in the control of motor functions. However, studies have rarely adequately explored the differences between experts and amateurs. Therefore, the objective of the present study was to investigate the differences in F3 and F4 theta power between experts and amateurs during the aiming period of successful and unsuccessful golf putts. Fifty right-handed golfers were recruited for this study. According to handicap, they were divided into expert and amateur groups. The F3 and F4 theta power were contrasted between the successful and unsuccessful putting performances. Three-way mixed ANOVAs $2 \times 2 \times 2$ (Group \times Performance \times Hemisphere) were conducted. Due to a three-way interaction, two separate two-way mixed ANOVAs (Group \times Performance) were conducted for the F3 and F4. Finally, post-hoc tests were conducted for pairwise comparison. We found a significant interaction between Group \times Performance \times hemisphere ($p=0.038$), followed by a significant interaction between Group \times Performance for F3 ($p=0.017$). Post-hoc tests revealed that only experts exhibited lower theta power for successful putts compared to unsuccessful putts ($p=0.0308$). Additionally, we found a negative correlation between F3 theta power and performance, and a lower F3 theta power was observed at the beginning of the aiming phase of successful putting. The study revealed that lower attentional focus, as manifested by lower F3 theta, results in successful putting performances in experts, compared to amateurs. Suggesting the lower attentional focus reflects a state of automaticity. In contrast, heightened attentional focus or motor planning will result in an unsuccessful putting performance. This study supports the results of past research, which suggests the importance of the left hemisphere activity for motor function control. Future studies might target F3 electrode for interventions such as neural-feedback training in experts, which could enhance their sports performance.

KEYWORDS

Golf putting; Frontal theta; Lateralization; Sport performance; EEG

The effects of a mindfulness-based intervention on sport performance and cognitive functions

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ABSTRACT

Mental ability is one of primary foundations for successful sport performance and mindfulness has recently been recognized as a novel aspect of sport-related mental ability. The beneficial effects of mindfulness intervention on sport performance may be derived through alterations of executive function and psychological processes; however, few studies have simultaneously examined the influences of these two factors in the relationship between mindfulness and fine motor sport performance. This study investigated the effects of a mindfulness-based intervention (MBI) called mindfulness-based peak performance (MBPP) on sport performance and cognitive functions in archers, as well as the role of psychological status and the dose-response relationship of MBPP in archery performance. 23 archers completed a simulated archery competition and the Stroop task prior to and after MBPP training, which consisted of eight sessions over four weeks, while the mindfulness and rumination levels of the archers were assessed at three time points, namely, before, at the mid-point of, and after the MBPP training. The primary results revealed higher post-test shooting scores, cognitive function performances, and both general and athletic mindfulness levels compared to those for the pre-test. Additionally, decreased negative ruminations has revealed since the middle-test. Lastly, a positive correlation between the shooting scores and the mindfulness levels induced by the MBPP program was also observed. The present study provides empirical and preliminary evidence that supports the benefits of an MBPP program for archers in terms of shooting performance, multiple cognitive functions, and psychological outcomes. Additionally, the MBI ameliorated mindfulness and ruminations in the late-stage and middle-stage, respectively. Lastly, the MBPP program may be a promising approach for enhancing athletic performance; however, further studies considering performance-relevant outcomes and with high-quality methodology are needed to replicate the findings of the present study.

KEYWORDS

Mindfulness intervention;
Fine motor; Cognitive
functions; Dose-response

Development and initial validation of the life skills transfer scale for japanese collegiate athletes (LSTS-JCA).

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ABSTRACT

Introduction: In Japan, organizations such as KCAA (2021) and JAAF (2020) pay attention to support collegiate athletes to develop life skills through sports. Recently, many researchers have focused on the process of transfer life skills developed in sport to other life contexts. Using quantitative approaches to further examine and/

KEYWORDS

life skills transfer; collegiate
athletes; competitive sport;
scale development

or compliment qualitative approaches (e.g., Holt et al., 2017) is valuable to understand life skills transfer. Thus, it is important to create a measure that can assess how life skills Japanese collegiate athletes develop through a competitive sports transfer to other life contexts (Mossman et al., 2021). Purpose: The aim of this research was to develop a scale that assesses life skills transfer from competitive sport to other life contexts (e.g. study, career selection, relationships, and everyday life) for Japanese collegiate athletes, and provide initial validity and reliability evidence for the scale. Methods: Two studies were conducted to develop the Life Skills Transfer Scale for Japanese Collegiate Athletes (LSTS-JCA). In Study 1, 71 items were developed based on 10 dimensions of required life skills for Japanese collegiate athletes (Shimamoto et al., 2013). The items were reviewed by 8 experts of sport psychology to confirm the content validity. Subsequently, the factor analysis was conducted with the collected data of 262 participants (162 males and 100 females) to select a list of the items. In Study 2, confirmative factor analysis was conducted using the collected data of 391 participants (234 males, 154 females, and 3 not specified), to assess the factor structure of the scale. Subsequently, reliability and convergent validity of the scale was verified. Results: In Study 1, the initial 40-item was extracted and the content validity evidence for all items was developed. In Study 2, LSTS-JCA which consisted of 10-subcales, and 30-items was developed, with the internal consistency reliability ($\alpha = .60-88$) and convergent validity by correlating scores on the LSTS-JCA with scores on an assessment tool that measures a related construct. Conclusion: Collectively, these studies provided initial evidence for the validity and reliability of the LSTS-JCA. Researchers can use this measure to reveal the factors of life skills transfer through the quantity approach. Also, practitioners can assess Japanese collegiate athletes' perceived life skills transfer from a sport context to other with this scale.

Predictors of academic performance of first-year student-athletes under the Covid-19 pandemic in Japan

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ABSTRACT

Due to the COVID-19 pandemic, many college sports programs have been canceled and many college teams were to be suspended. And many universities had to close their campuses and shift to online education. This study used a time-lagged design and investigated if grit (Duckworth et al., 2007), SOC (Sense of Coherence; Antonovsky, 1979), life-styles, career choice, and gender predicted academic performance (grade point average (GPA) and total number of credits) of first-year student-athletes in 2020-2021 academic year. The participants were 103 first-year student-athletes (88 male and 15 female) of Seiwa

KEYWORDS

COVID-19; Student-Athlete;
Academic performance

university in Chiba, Japan. The participants completed the Japanese version of the 13-item Sense of Coherence Scale and the Japanese version of the 8-item Grit Scale, in May, during the first month of classes. They also responded to questionnaires inquiring about several background and life-styles variables, including the frequency of doing part-time work and career choice (decided/undecided). Multiple regression analyses indicated that independent variables including gender, career choice, frequency of doing part-time work, and “perseverance of effort” which is a sub-facet of “grit” best predicted GPA and total number of credits in the first academic year. The findings of this study emphasized gender differences in academic performance among first-year student-athletes. Female student athletes are having more success than male student athletes. The results also suggested that decided career choice and perseverance of effort in the first month of classes predicted student-athletes’ first-year academic performance under the COVID-19 crisis. Since frequency of doing part-time work is assumed to be related to their financial situation, continuous financial support should be provided. In addition, starting career education from the first-year and helping student-athletes make career decisions could improve academic performance, even when facing adversities.

Examination of improved model of sports coach commitment in extracurricular sports activities teachers: focus on social support for workers and identity

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ABSTRACT

In Japan, the youth play sports in an environment centered on school-based extracurricular sports activities, and coaching is provided by extracurricular sports activities teachers. However, their working environment is poor. Therefore, it was shown that many extracurricular sports activities teachers do not want to be involved in school-based extracurricular sports activities. We focused on “sports coach commitment” to increase the number of extracurricular sports activities teachers who wish to be involved in school-based extracurricular sports activities. The formation of identity was found to contribute to the improvement of commitment (Piliavin et al., 2002). Furthermore, it was shown that social support for workers (informational, instrumental, and emotional support) is needed to form an identity. This study aimed to examine the improved model of sports coach commitment in extracurricular sports activities teachers by investigating the relationships between sports coach commitment, sports coach identity, and social support for workers. The participants were 189 (155 men, 34 women) middle school and high school teachers who coached sports for the

KEYWORDS

extracurricular sports activities; teacher; coach; commitment

athletic activity club in Kyushu, Japan. They completed questionnaires (Sports Coach [Teacher] Commitment Scale [Yahiro & Hagiwara, 2019], Sports Coach [Teacher] Identity Scale [Yahiro & Hagiwara, 2019], Brief Scale of Social Support for Workers [Mori & Miura, 2006]). The reliability and validity of the scale used in this study was confirmed. In examining the relationships between sports coach commitment, sports coach identity, social support for workers using a correlation analysis, a significant correlation was found among all factors. A path analysis was performed with social support for workers as an independent variable, sports coach identity as a parameter, and sports coach commitment as a dependent variable. The path analysis showed that only emotional support was associated with sports coach identity. Moreover, the hypothesized model demonstrated the goodness of fit and validity of the original improved model of sports coach commitment. The results indicated that emotional support in social support for workers influences sports coach identity formation, and teachers for extracurricular sports activities forming sports coach identity have a high sports coach commitment. Thus, to increase sports coach commitment, sports coaches need support from colleagues in the school for their actions and ideas.

Effect of vulnerability on psychological stress responses among Japanese university athletes

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ABSTRACT

Vulnerable athletes tend to have poor mental health. Vulnerability is defined as “a susceptibility to damaging oneself, a possible state of brittle or emotional hurt” (Hayashi, 2002). Previous studies have revealed a positive association between vulnerability and depressive symptoms (Yamaguchi et al., 2019). Although “mental health” and “depressive symptoms” have been used as stress response in previous studies, they include some contents that are not be experienced in daily life. Therefore, it is necessary to compare the vulnerable with the non-vulnerable using the stress responses that are experienced in daily life, and to examine whether the vulnerable actually exhibit the reactions. Thus, this study aimed to examine the effect of vulnerability on psychological stress responses among Japanese university athletes. The survey was conducted from September to October 2020 with 295 university athletes (male = 177, female = 118, mean age = 19.6 years, and SD = 1.19). The questionnaire comprised demographic data, the Athletic Vulnerability Scale (Yamaguchi et al., 2019), and the Stress Response Scale (Suzuki et al., 1997). Statistical analysis first, the descriptive statistics for each scale

KEYWORDS

vulnerability; stress response; mental health

were calculated. Next, a t-test was performed with the vulnerability score classified into two groups based on the mean value as the independent variable and the subscale of the psychological stress response as the dependent variable. The t-test revealed that high vulnerability athletes showed higher scores for depression-anxiety ($t = 6.89$, $df = 280$, $p < .001$), irritability-anger ($t = 4.87$, $df = 282$, $p < .001$) and helplessness ($t = 5.33$, $df = 293$, $p < .001$) than low vulnerability athletes. Among the subscales of the psychological stress response, depression-anxiety, irritability-anger, and helplessness, the score for helplessness was the highest, followed by the score for depression-anxiety. Vulnerability was found to be associated with depressive symptoms (Yamaguchi et al., 2018), suggesting that vulnerable athletes are more likely to develop depression and anxiety. Additionally, serious injuries, setbacks, and relationship troubles can lead to depression, anxiety, and helplessness (Ueno & Shimizu, 2011). Thus, we predicted that the more vulnerable athletes would be to take the above events negatively. From this study confirms that vulnerable athletes show a more psychological stress response compared to the non-vulnerable athletes.

Angel on the shoulder (Evil Too): self-talk in sport overview and future research direction

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ABSTRACT

Background: self-talk is one of the most useful but could be the most ignored one in our daily life. In sport psychology literature, there are a lot of researches have been investigated on the topic of self-talk. Although there isn't any theoretical background established in the very beginning during the early 90ths, however, continuous involvement by academics have been accelerated research findings as well as theory building in recent year. Self-talk has been undertaken as one of the mental skills to improve sport performance. Not only as a psychological skill alone but also self-talk can also play a role in imagery and also self-regulation for athletes to improve altogether. therefore, the current project was to overview self-talk in sport psychology literature and to establish directions for future study. Methods: the present project included several major researchers such as James Hardy, Judy Van Raalte and Alexander Latinjak as a start point for publication search, and followed by a thorough review of the references list on each published papers. Over 80 published papers and book chapter were located. Results and discussion: firstly, the different author has their terminology for why and what factors will influence the occurrence of self-talk, but in nature, most of the scholar would agree that antecedents and consequences or functions of self-talk would be affected by definition(s) of self-talk, and working definition of self-talk could be improved along with the research design and approaches of

KEYWORDS

inner voice; literature review; sport; mental skill

their study. Secondly, both quantitative and qualitative design has been conducted and more recently, new technique/software to capture on-time self-talk become a trend. Last but not least, goal-direct self-talk link to sport performance and other aspects of sport-related variables have been emphasized.

Mindfulness effects on task induced EEG and putting performance in skilled golfers

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ABSTRACT

The ability of a skilled performer to enter into a state of mindfulness can greatly enhance their cognitive-motor performance, especially in a sporting domain. Entering a mindfulness state can be manifested through alterations in attentional focus. Utilization of neuroimaging techniques such as electroencephalography (EEG) can capture the brain dynamics that reflect changes in attentional focus via frontal midline theta (Fm θ). This study investigated the predictive power between trait mindfulness, EEG, and golf putting performance. Forty-three male skilled golfers were recruited. 9 participants were excluded due to noisy EEG data. The remaining 34 participants (year of practice: 12.2 ± 7.26 ; recently handicap: 17.6 ± 7.79) were all right-handed and had no brain diseases. Trait mindfulness was measured by the Chinese Mindful Attention Awareness Scale (CMAAS) comprising 15 questions with a 6-point Likert scale, which contained two major dimensions: attention control and non-judgement. Golfers performed 60 putts at a distance of 3 meters from the hole while EEG was recorded. Multiple regressions were performed to examine the relationship between mindfulness, EEG of Fm θ , and putting performance. The stepwise regression indicated that mindfulness could positively predict both the Fm θ at T1 ($-2000 \sim -1000$ ms), explaining 14.2% of the variance ($R^2 = 0.142$, $F = 6.477$, $p = 0.016$), and putting performance, explaining 12.3% of the variance ($R^2 = 0.123$, $F = 5.610$, $p = 0.024$). Moreover, Fm θ at T1 could positively predict putting performance, which explained 16.8% of the variance ($R^2 = 0.168$, $F = 7.657$, $p = 0.009$). Trait mindfulness as measured in the present study could serve as a distal predictor for both top-down in-task attention regulation and subsequent golf performance. Frontal midline theta, on the other hand, served as a more proximal predictor for golf performance. The close relationship among mindfulness, Fm θ , and motor performance not only make sense, as attention is one of key ingredients in mindfulness and a critical factor in performance, but also provide clarity regarding applications such as assessment of attentional training effectiveness.

KEYWORDS

psychophysiology; Fm θ ; attention; precision sports

The causal relationships among narcissism personality, self-esteem, and perceived performance of team athletes

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ABSTRACT

Purpose: This study aims to verify the casual relationships among narcissistic personality, self-esteem and perceived performance of domestic team athletes. The relationships among the personality traits, self-esteem, and perceived performance are well reported from the previous studies. However, the narcissistic characteristic of an athlete hasn't been extensively investigated. While this characteristic seems to be heavily correlated with self-esteem, we do not fully understand whether the narcissism would have positive relationship with perceived performance as the self-esteem does. Also, how this characteristic would be interacting with other factors in the team-environment has not been investigated. **Methods:** To this end, data were collected from team sports players belonging to semi-professional teams and analyzed with final 242 copies after initial screening process. When it comes to analysis method, IBM SPSS 23.0 and AMOS 25.0 were used to perform frequency analysis, confirmatory factor analysis, measurement model verification, and mediated effectiveness verification, and the results are as follows. **Results:** First, narcissistic personality of athletes was found to have a statically significant effect on positive self-esteem, and no statistically significant impact on negative self-esteem. Second, it revealed that positive self-esteem has a statistically significant effect on perceived performance, and negative self-esteem has a statistically negative effect on perceived performance. Third, positive self-esteem played a full mediating role in the relationship between athletes' narcissistic personality and perceived performance. **Conclusion:** These results are meaningful in that the positive aspects of narcissistic personality that athletes have were proved. While there could be a concern regarding the negative consequences of narcissism in team environment, our initial findings seem to support the positive influence of this trait, and it will be a momentum to promote other studies based on athletes' individual characteristics.

KEYWORDS

Narcissism; Personality; Self-Esteem; Perceived Performance

The effect of brief mindfulness intervention to the incidence of inattentional blindness and accuracy of inattentional blindness task

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ABSTRACT

Introduction: Inattention blindness (IB) is when one cannot recognize an unexpected object when his attention is engaged elsewhere. In sports, when practice or competition, the occurrence of IB may lead to bad performance or wrong decision-making of the athletes. Thus, whether athletes can both maintain concentration and reduce the occurrence of IB is the key to achieving excellent sports performance. Prior research has reported the effect of mindfulness on attention and suggested mindfulness improves the awareness of unexpected stimuli in IB tasks. However, it is still unknown how mindfulness improves athletes' IB incidence and task accuracy and whether IB incidence and task accuracy are different in different sports. **Purpose:** The aim of the study is to reveal whether brief mindfulness intervention may improve the rate of IB incidence and the accuracy of the IB task. **Methods:** 35 subjects were tested individually in a quiet laboratory and were divided into three groups, athlete groups of handballs (HG; $n = 13$), soccer (SG; $n = 12$), and a control group of non-athletes (CG; $n = 10$). All of the subjects participated in a brief audio-guided mindfulness raisin exercise for about 6 minutes. And the subjects completed two times standard IB tasks and filled out the Mindful Attention Awareness Scale (MAAS) before and after listening. The root-mean-square error was calculated for task accuracy. **Results:** The results showed that all IB incidence rates in three groups after the six-minute brief mindfulness intervention had decreased. (HG: 86% to 14% in; SG: 75% to 0%; CG: 80% to 30%). The IB task accuracy rates were significantly improved in SG (1.81 ± 0.83 to 1.29 ± 0.51) ($P < .05$), there was no significant difference in the other two groups (HG: 2.42 ± 1.8 to 1.58 ± 0.53 , CG: 1.81 ± 0.86 to 1.89 ± 1.29). **Conclusion:** Short-term mindfulness exercise can help athletes reduce the incidence of IB and may be able to improve the accuracy of IB tasks. Further research is needed to clarify the mechanism of mindfulness on IB and explore the differences between different sports.

KEYWORDS

Inattention blindness;
Mindfulness; Mindful
Attention Awareness Scale

Emotional intelligence training: influence of a brief slow-paced breathing exercise on psychophysiological variables linked to emotion regulation

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ABSTRACT

Athletes experience a large range of emotions during competitions. Emotions can be considered as short-lived psychological states, but some more stable emotional dispositions can also be identified. One of them is emotional intelligence (EI), which reflects the way individuals deal with their own and others' emotions. EI plays an

KEYWORDS

Heart rate variability;
Parasympathetic nervous
system; Vagus nerve;
Diaphragmatic breathing;
Abdominal breathing

important role in sport performance, and hence its training is of high relevance for athletes. The theoretical foundations of EI have evolved to include its different aspects via the tripartite model, including the knowledge, ability, and trait levels. The knowledge level reflects what people know about emotions (e.g., knowing that SPB may help them to regulate their emotions), the ability level reflects what they can do about emotions (e.g., they can perform SPB when instructed to do so), and the trait level, what they usually do about emotions (e.g., using SPB when facing challenging emotional situations in their daily life). The aim of this paper is to investigate whether a brief SPB technique without biofeedback could be considered to be integrated to EI training, regarding its effects on psychophysiological variables linked to emotion regulation. Designing EI training programs requires first to test activities that target its main dimensions. We focus here on emotion regulation, and the aim of this study was to investigate the effects of a brief SPB exercise on psychophysiological variables linked to emotion regulation, namely cardiac vagal activity (CVA), perceived stress intensity, perceived emotional arousal, and perceived emotional valence. A total of 61 participants took part in the study. They realized a 5-min SPB exercise and a control condition with a 5-min rest measurement. CVA was indexed with the root mean square of successive differences (RMSSD). Participants were also asked to rate their perceived stress intensity, perceived emotional arousal, and perceived emotional valence. Results showed that CVA was higher during SPB in comparison to the control condition. Contrary to our hypothesis, perceived stress intensity and perceived emotional arousal were higher after SPB, and perceived emotional valence less positive after SPB, which could be explained by experiencing dyspnea (i.e., breathing discomfort), and the need to get used to the technique. Consequently, we may conclude that although SPB effects are immediate at the physiological level via CVA, at the subjective level they may require some training to lead to perceived psychological benefits.

Physical activity and its related psychological constructs among Korean university students

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ABSTRACT

The current study investigated differences in health risk perception, health-related knowledge, self-efficacy, exercise adherence, pros, cons, and physical activity by gender and the level of exercise participation and to identify the influences of the psychological constructs on physical activity in Korean university students. A total of 495 university students (213 males, 282 females; Mage = 20.55 years, SD = 2.01) from three universities located in Seoul, Incheon, and Gyeonggi-do voluntarily participated in this study. Physical activity, health risk perception, health-related knowledge,

KEYWORDS

University students;
psychological factors;
physical activity

exercise self-efficacy, pros and cons, exercise adherence, were measures to identify relationships between psychological variables and health-related risk perception and knowledge. Before analyzing the main research questions of the study, exploratory factor analysis and reliability analysis were performed to verify validity and reliability of the study instruments. Then, MANOVAs were conducted to identify differences in exercise knowledge, health risk perception, exercise self-efficacy, physical activity pros and cons, exercise adherence, and physical activity by gender and level of exercise participation. In addition, multiple regression analyses were carried out to identify the factors affecting physical activity by gender and exercise participation. Results indicated that physical activity or various cognitive and psychological factors differed depending on gender. Male students responded more to physical activity, exercise self-efficacy, physical activity pros, exercise adherence, and health risk perception than female counterparts, while females responded more to physical activity cons. Moreover, Results indicated that male students' moderate and strenuous physical activity was significantly explained by exercise adherence ($\beta = .42$, $p < .001$) and pros ($\beta = .16$, $p < .001$). Meanwhile, a total physical activity was significantly influenced by exercise adherence ($\beta = .47$, $p < .001$). For female students, exercise self-efficacy ($\beta = .14$, $p < .05$), cons ($\beta = -.16$, $p < .01$), and exercise adherence ($\beta = .23$, $p < .001$) were significant in explaining a total physical activity. Furthermore, results showed that the psychological variables had significant influences on physical activity according to the level of physical activity participation. In specific, cons ($\beta = -.25$, $p < .01$) and others-health risk perception ($\beta = .20$, $p < .05$) were significant in explaining the total physical activity of the nonexerciser group. For the intermittent exercise group exercise adherence ($\beta = .28$, $p < .001$) and cons ($\beta = -.19$, $p < .01$) were influential factors on the total physical activity. In the regular exercise group the total physical activity was significantly influenced by exercise adherence ($\beta = .42$, $p < .001$), and pros ($\beta = .17$, $p < .05$). It needs to be continued in order to gain more empirical knowledge from evidence-based investigations applying the theory-based interventions.

Effect of sport relation concussion on white matter in retired athletes from diffusion tensor imaging approach: a systematic review

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ABSTRACT

Athletes frequently incur concussions on the competitive sports field, which causes many chronic neurological and clinical symptoms in the aftermath, and studies have used neuroimaging in order to assess the impact of sports-related concussions (SRC) on the white matter of the brain. The purpose of this article is to investigate the changes in the brain white matter of retired SRC athletes from the perspective of diffusion tensor imaging (DTI), in a systematic review. This article is based on searches of two databases, MEDLINE and PubMed, and evaluates the quality of these thematically related selected articles. A total of 11 studies were included in the literature review, 10 of which reported DTI white matter changes. The results showed that there were significant differences in the DTI parameters and indexes changed (fractional anisotropy decreased and mean diffusivity, radial diffusivity and axial diffusivity increased) of certain brain regions between the SRC retired athletes and the control group. The brain regions included frontal lobes, temporal lobes, parietal lobes, corpus callosum, small forceps, forceps, combined fibers' superior longitudinal tract and uncinate tract', inferior frontal occipital tract, internal capsule forelimb, anterior thalamic radiation, and corticospinal tract. In particular, the corticospinal tract, and the prethalamic radiation area, have shown significant differences in diffusion parameters, which means that the SRC retired athletes have poor white matter integrity, which may indicate a high risk for neurodegenerative diseases after retirement. Finally, this article suggests that future research should use large samples, longitudinal studies and follow-up discussions, in conjunction with studies of brain gray matter and brain networks, so that the relevant knowledge of this topic may be made more complete.

KEYWORDS

diffusion tensor imaging;
sports-related concussion;
retired athletes; white matter

The influence of a state of emergency on exercise habits among Japanese middle-aged and elderly persons

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ABSTRACT

Because of spread of COVID-19, our lifestyle was greatly changed over the last year. A state of emergency has been issued, and we have a sedentary life for a long term. There are growing concerns about an increase of lifestyle-related illness and frailty among middle-aged and elderly persons. This study examined the influence of the state of emergency on exercise habits among Japanese middle-aged and elderly persons. Internet survey was conducted at March 2020. Participants were 150 male and 150 females in their 50s to 70s ($M = 64.49$, $SD = 8.16$). Participants completed questionnaire measures of changes of their exercise habits compare with one year ago. They were asked about

KEYWORDS

Exercise habits; Exercise environments; COVID-19

exercise frequency (no exercise, decrease, slightly decrease, not changed, slightly increase, increase) at four environments (at home, around the home, workout gym, sports ground). The exercise habits were compared using chi square tests. 23.0% of participants had no exercise habits at all environments. In exercise at home, prevalence of no exercise (41.3%) and not changed (38.3%) were significantly higher than others. Exercise around the home showed a comparable result, no exercise (33.0%) and not changed (34.3%). Participants were 60.7% no exercise, 22.7% not changed, 10.0% decrease at workout gym. In exercise at sports ground, there were 55.0% no exercise, 26.3% not changed, 12.0% decrease. Together these results provide that there was no change in exercise habits at home and around it, and exercise in the gym and sports ground was tend to reduced. Decreased exercise habits in exercise facilities are due to fear of COVID-19 infection. It is necessary to form new exercise habits while preventing infection. 1/4 participants had not any exercise habits despite decrease of daily physical activity by stay-at-home. Additional state of emergency can have serious health consequences. Further research is needed with larger study samples to explore exercise habits and to develop intervention to promote a healthy lifestyle, especially in post-COVID-19 recovery efforts.

The effects of an acute bout of aerobic exercise on hippocampal-dependent memory in children

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ABSTRACT

Due to a growing trend of childhood inactivity, young children are becoming more overweight and unfit, resulting in not only poorer physical health but also suboptimal development of the brain and poorer cognitive function. In response, research has focused on exercise based interventions designed to increase physical activity while improving cognitive function. Specifically, aerobic exercise has been shown to have acute benefits to the functional integrity of the hippocampus, a brain region essential for memory function, with exercise resulting in greater hippocampal functional connectivity and hippocampal dependent memory performance in young adults. However, it remains to be determined whether similar exercise induced facilitation of hippocampal dependent memory can be observed in children. The purpose of this study was to explore the acute effect of aerobic exercise on children's hippocampal memory using behavioral and fMRI measures. Eight to ten year old children were recruited to complete a 20 minute moderate aerobic exercise or a seated rest intervention on separate and counterbalanced days. Following intervention, a relational and item specific encoding task and a memory recognition task were completed. During these memory tasks a functional magnetic

KEYWORDS

Physical Activity; fMRI; Cognition; Hippocampus

resonance imagining scan was performed to allow investigations into encoding- and recognition-related hippocampal activation and connectivity with other brain regions. Preliminary results ($N = 6$) did not show a significant difference in any recognition performance outcomes as well as encoding- and recognition-related brain hippocampal activation and connectivity following exercise compared to rest. Based on the preliminary findings, an acute 20-minute bout of moderate intensity exercise may not be enough to elicit changes in behavioral and neural outcomes of hippocampal memory in 8 to 10 years old children.

Validation of the physical activity and leisure motivation scale on hungarian sample

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ABSTRACT

The Physical Activity and Leisure Motivation Scale identifies a reasonably broad range of physical activity motivations in leisure. It is easy to administer and score, and it has a high predictive value for exercise adherence. The scale has been applied in a couple of countries in different research projects. Beside research purposes, leisure professionals can successfully apply it as well in their everyday work. Due to its benefits, our aim was to validate the PALMS on Hungarian sample. $N = 893$ participants were involved in this study (mean age = 33.66; $SD = 11.79$; males = 428; females = 465) who took part in different levels of diverse recreational sports. Besides the above-mentioned questionnaire, the Sport Motivation Scale-II (SMS-II), and the Body Shape Questionnaire Short Form (BSQ-14) were applied for the validation. The confirmatory factor analysis supported the eight-dimensional theoretical model ($\chi^2 = 3427.78$; $df = 712$; $p < 0.001$; $TLI = .94$; $CFI = .94$; $GFI = .95$; $RMSEA = 0.07$ [90% $CI = .06 - .07$]; $SRMR = .08$), that indicated an acceptable fit to the data. Internal consistency of the subscales varied between $\alpha = .87$ and $\alpha = .91$, thus proved to be adequate (except for $\alpha = .57$ for Expectations subscale). Examination of construct validity revealed significant relationships among mastery and more self-determined forms of motivation measured by SMS-II (intrinsic motivation $r = .70$; integrated motivation $r = .41$; identified motivation $r = .59$); enjoyment and more self-determined forms of motivation (intrinsic motivation $r = .53$; integrated motivation $r = .47$; identified motivation $r = .40$), and BSQ-12 and Appearance ($r = .30$). Physical and psychological condition have a relationship with introjected regulation ($r = .44$ and $r = .43$, respectively). The Hungarian version of the PALMS seems to be a valid and reliable questionnaire to measure.

KEYWORDS

PALMS; physical activity motivation; validation

Effects of exercise modes on white matter microstructure in late midlife: a diffusion tensor imaging study

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ABSTRACT

Aerobic exercise (AE) performed in late midlife is associated with increased white matter (WM) microstructure. In particular, Fractional anisotropy (FA), an index of microstructural WM integrity derived from diffusion tensor imaging (DTI), indicated a higher WM status among those individuals that engaged in regular AE (i.e., walking, running, cycling), compared with those with irregular exercise. However, it remains unknown as to whether other exercise modes, such as Tai Chi (mind-body exercise), can facilitate WM improvement and/or maintenance for adults in their late midlife. Therefore, the present study was done in order to compare two exercise modes (i.e., Tai Chi, walking) with a sedentary control group, regarding WM microstructure results, and thus determine the regional specificity changes on WM, in order to measure microstructural effects in response to exercise modes. Thirty-six healthy adults between the ages of 55 and 65 ($M = 57.89$; $SD = 3.52$) were recruited for the study. According to participants' exercise experiences, they were allocated into three groups (i.e., Tai Chi, walking, control) and were required to complete physical fitness measurements [health-related fitness: aerobic fitness (VO_{2peak}), muscular strength, muscular endurance (push-up), flexibility, body fat percentage; skill-related fitness: agility, power] and magnetic resonance imaging (MRI) scanning. Our results revealed that the Tai Chi group exhibited a higher FA value in the left cerebral peduncle, compared to that brain region in the control group. Furthermore, we also observed that both the Tai Chi and the walking group exhibited higher FA value in the right uncinate fasciculus and the left external capsule, compared to those brain regions in the control group. The correlation analysis further revealed that these brain regions (i.e., the left cerebral peduncle, the right uncinate fasciculus, the left external capsule) with significantly greater FA value were positively correlated with a higher level of physical fitness measurements, especially in VO_{2peak} , push-up, agility, and power. These findings collectively suggest that regular exercise is associated with a higher WM microstructure status, regardless of the exercise modes, and these results could thus bring insights into future prevention/intervention strategies being applied, in order to prevent or retard age-related impairments in late midlife.

KEYWORDS

Tai Chi; exercise modes; white matter microstructure; midlife

The effects of acute aerobic and resistance exercise on the planning aspect of executive functions in children with preterm birth

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ABSTRACT

Acute exercise has been shown to facilitate executive functions (EF) in a childhood population. However, the extent to which acute exercise benefits EF in children of preterm birth (PB) remains unknown. Furthermore, the investigation of whether exercise modes, such as aerobic exercise (AE), and resistance exercise (RE), influence the EF effects for children is another unanswered question. Taken together, these potential factors inform the present study, which was therefore to investigate whether acute exercise benefits specific EF domains, especially in relation to planning, which has been commonly known to suffer from developmental deterioration in children with PB. We herein also determined the EF effects from AE and RE in this child population. A total of 30 child participants of PB [aged 9-12 years; 20 boys and 10 girls; mean gestational age (GA) was 31.13 weeks] completed three exercise sessions for 30 minutes, using a counterbalance design: moderately-intense AE, moderately-intense RE, and sedentary control. Following each session, the children performed a Tower of London (TOL) task, a neuropsychological test, these involved manipulating the planning aspect of EF demands. The results revealed that in comparison to the control treatment, acute exercise was performed with a lesser total move score, shorter total executive time, and shorter total problem-solving time, which implied that acute exercise benefits move and time efficiency linked to the planning aspect of EF. For ensuring that the effects resulted from the applied exercise modes, the present study showed that children with PB, who engaged in both AE and RE, exhibited similar and positive benefits on the planning aspect of EF, compared to those engaged in the sedentary control. In conclusion, these findings suggest that acute exercise, regardless of the particular exercise modes, has the potential to facilitate EF in children of PB. Future investigative works should further consider gender, multiple EF tasks, and the underlying mechanisms from biological and neuroelectric indications in order to investigate the possible relationships between acute exercise and EF in children of PB.

KEYWORDS

acute exercise; executive functions; children; preterm birth; Tower of London task

Relationships between parental support, peer support, physical self-concept, and physical activity among fifth-and

sixth-grade elementary school students in Taiwan: exploring the mediating effects of self-efficacy and motivation

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ABSTRACT

The role of physical activity (PA) in the reduction of obesity has been well documented; factors contributing to the level of PA had attracted numerous research endeavors. However, in Taiwan, few studies have considered simultaneously the psychological, family, and peer factors influencing PA levels among elementary school children; and relation patterns among such factors remained unclear. Therefore, the aim of this study was to examine the mediating effects of self-efficacy and motivation on the relationships between parental support, peer support, physical self-concept, and PA as well as gender difference in PA among fifth- and sixth-grade elementary school students in Taiwan. A convenient sample of 388 fifth- and sixth-grade schoolchildren, which comprised 175 boys and 213 girls, was recruited from central Taiwan. The research instruments included the Parental Support in PA Scale, Peer Support in PA Scale, Physical Self-Concept Scale, Self-efficacy for PA questionnaire, PA Motivation Questionnaire, and International Physical Activity Questionnaire. Weekly amounts of PA were converted into total weekly PA metabolic equivalents (METs). Data collection involved an anonymous group questionnaire being administered after approval was obtained from the institutional review board. Consent forms were obtained from the school, parents, and students. The adopted statistical analysis techniques included descriptive statistics, independent sample t test, and structural equation modeling (SEM). The average weekly PA was 2033.63 METs (SD = 1437.08). PA was significantly higher among boys than girls. SEM results demonstrated good model fit in the measurement and structural models. Direct effects of parental support, peer support, and physical self-concept on PA self-efficacy were discovered, with parental support having the strongest effect. Direct effects of peer support, physical self-concept, and PA self-efficacy on PA motivation were also discovered, with self-efficacy having the strongest influence. Parental support and PA self-efficacy directly affected PA, with self-efficacy having the greatest effect. Self-efficacy had a complete mediating effect on the relationships between parental support and PA, peer support and PA, and physical self-concept and PA; no mediating effect of PA motivation was found. The results of this study indicated a gender difference in PA among fifth-and-sixth-grade elementary school children in Taiwan. Moreover, self-efficacy in PA was an essential factor influencing PA because it had not only a direct effect on the amount of PA but also complete mediating effects on the relationships between parental support, peer support, physical self-concept, and PA. Results of the current study have valuable implications for educators, health-promotion professionals, and parents.

KEYWORDS

gender difference; psychosocial factors to exercise; school children; structural equation modeling

The assessing and influences for students interpersonal interaction in physical education

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ABSTRACT

Social interaction in physical education courses (PE) may be a unique and positive experience for adolescents and children. They learn how to communicate with adult and peers through implicit language from physical competence in PE. The social interaction is the one of important experiences in PE. The students' experience in PE could boost or destroy their motivation for exercise in future. According to the self-determined theory, satisfaction for relatedness need is an essential factor to improve students' motivation and effort in PE. However, previous studies about the interpersonal relationship and motivation in PE limited to focus on single social agent. Another hand, it was need to consider social and cultural implications for validated and assessed the social interaction. Therefore, the purposes of this study were to develop measurements about teacher and peer relatedness and to explore the influences about social relationship on intrinsic motivation, effort and enjoyment in PE. In study1, there were 12 PE teachers (9 females and 3males, average age = 40.83 years, average seniority = 17.58 years) and 21 students (13 girls and 8boys, average age = 17.59) who were interviewed through individual and focus group condition. All the oral records transferred to words texts. The texts were analyzed by using content analysis method. In study2, there were 372 students (192 girls and 180 boys, average age = 17.77) sampled with purpose from public high school who completed measurements. The measurements items were arranged from study1. Explore factor analysis shows that teacher relatedness support contains 39 items as 5 factors (Cronbach's $\alpha = .86 \sim .92$) and peer relatedness support contains 13 items as 2 factors (Cronbach's $\alpha = .83 \sim .91$). Both teacher relatedness support and peer relatedness support are significantly to predict students' intrinsic motivation, effort and enjoyment in PE. In the meantime, peer relatedness support has higher predictive effect than teacher relatedness support in enjoyment but converse results in intrinsic motivation and effort. The results conclude that the quality of social interaction between students with teacher and peers may play the determinative roles on their positive experiences in PE. Teacher and peers relationship have different influences on experiences in PE. This study suggest that the social interaction measurements may need to more apply in future research and PE teachers should develop strategies to promote students enjoyment, motivation and effort.

KEYWORDS

teacher-student relationship; peers relationship; relatedness support; intrinsic motivation

Effects of multi-model exercise on attention in middle-aged adults: a pilot study

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ABSTRACT

Middle-aged individuals, being in a later stage of life, frequently face a decline in numerous cognitive functions, including processing speed and attention. The attention aspect of the cognitive functions determines how long it takes for a person to make complex decisions, and attention is usually associated with safety risk and performance in work. There are numerous research evidences suggesting that regular physical activities are considered a promising intervention for increasing cognitive functions, and/or for preventing cognitive decline, among them, aerobic exercise and resistance training, have been shown to improve attention in middle-aged adults. However, several studies have shown that exercise programs using a multi-modal exercise program seem to have evidenced additional benefits, for both cognitive function and physical function. Therefore, the present study aimed to use a one-group pretest-posttest design, which was to examine the effects of multi-model exercise training on attention in middle-aged adults. Sixteen healthy, middle-aged adults (mean age = 50.1 years, 87% females) were recruited, and performed the 12-weeks of a multi-model exercise training program at National Taiwan Normal University. The multi-model exercise program is based on Chinese martial arts (i.e., Bagua Dao yin), which consisted of a variety of training components, such as aerobics, strength, balance, flexibility, coordination and meditation, and the program was performed for 1.5 hours for each session, for one session per week. The Colorsquare app was utilized in order to assess the attentional ability of the participants, before and after one week from the intervention, which is a game-based app that required participants to keep attention on the squares until they found the square with a different but similar color, and then touch it, so as to get a score. No significant changes were found in attentional ability at pre-test from that of the post-test ($p = .129$), but the mean score of the post-test (score = 482) was higher than that of the pre-test (score = 453). Effect sizes were 0.39. This pilot study suggested that 12-weeks of multi-model exercise training seemingly did not improve attentional ability in middle-aged adults, but there was a potential benefit on attention, because a moderate effect size was observed. Future research with large sample sizes, being compared with single exercise (i.e., aerobic exercise) and a control group, was recommended, in order to examine results toward a better understanding of the effects of multi-model exercise on attention in middle-aged adults.

KEYWORDS

multi-model exercise; attention; middle-aged adults

Participation motives and expectations in basic psychological needs satisfaction from exercise programs in people with disabilities

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ABSTRACT

The participation in exercise programs of people with disabilities has been an important topic in exercise psychology. However, most of the research works have focused mainly on the participation barriers people with disabilities encountered, their expectations from exercise programs were rarely systematically examined. According to the self-determination theory (Deci & Ryan, 2000), satisfaction of the three basic psychological needs (autonomy, competence, and relatedness) leads to greater intrinsic motivation and more adaptive behaviors in engaging in physical activities. Therefore, a better understanding of the expectations from exercise programs of people with disabilities in terms of the satisfaction of the three basic psychological needs should provide value information for practitioners to help to enhance the levels of physical activity of people with disabilities. Thus, the purpose of this study was to explore the expectations of the satisfaction of the basic psychological needs and participation motives of people with disabilities participating in exercise programs. Participants were recruited from physical fitness classes for people with disabilities supported by local governments in Taiwan, including 41 disabled individuals (14 males, 27 females, aged 11-66) and 11 parents of disabled individuals. Of the 41 disabled individuals, there were 29 with physical disabilities, 6 with hearing impairments, 5 with intellectual disabilities, and 1 with hematopoietic disease, 15 of them were congenital while 26 were acquired. Chinese versions of Psychological Need Satisfaction in Exercise Scale and Motives for Exercise Inventory were administered to test their expectations from the classes. Repeated measure ANOVA showed no significant differences among the expectations of autonomy, competence, and relatedness satisfaction in participants. However, one-way MANOVA showed that individuals with congenital disabilities have significantly higher levels of expectation for competence satisfaction than those with acquired disabilities. In addition, disabled individuals expected more for competence and relatedness satisfaction than parents' expectations for the disabled individuals. For participation motives, repeated measure ANOVA revealed that fitness enhancement was significantly more important than stress release, social relationship, and weight management for them to take part in the class. No other differences were found in gender and type of disability. In general, people with disabilities expect the three basic psychological needs satisfaction equally from exercise programs. It seems, however, people with congenital disabilities look for more competence satisfaction than those with acquired disabilities. Practitioners instructing exercise programs with people with disabilities may emphasize more on the enhancement of perceived competence as well as fitness levels.

KEYWORDS

competence; relatedness; congenital disabilities; fitness enhancement

The correlation between carotid flow velocity, cognitive functions and cardiorespiratory fitness in healthy elders: a pilot study

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ABSTRACT

Lower carotid arterial flow velocities have reflected the presence of increased intracerebral vascular resistance and the decreased ability of delivering oxygenated blood into the essential cortical regions. Moreover, lower carotid flow velocity and artery mean flow velocity have been associated with a higher risk of cerebral vascular disease, as well as vascular dementia and Alzheimer's disease, respectively. On the other hand, higher cardiorespiratory fitness (CRF) levels have been associated with increased cerebral perfusion and superior cognitive functions in elders. However, few studies have investigated the associations between carotid flow velocity, CRF and cognitive functions in healthy elders. Thus, the aim of this pilot study is to explore the correlations between carotid flow velocity, or CRF, and cognitive functions. Eighteen healthy older adults (mean age: 64.1 yrs) were recruited in the current study. None of the participants reported any cardiovascular diseases or cognitive impairment. All participants have completed the Stroop task (i.e., congruent, incongruent and neutral conditions) and the Mini-Mental State Examination (MMSE) in order to assess their cognitive function levels. The Bruce submaximal treadmill exercise test was administrated according to estimated participants' CRF levels (ACSM's guidelines for exercise testing and prescription (8th ed. 2010)). Finally, peak systolic velocity (PSV) and end-diastolic velocity (EDV) of the carotid flow were recorded in the common and internal carotid arteries by using a color Doppler Ultrasound instrument. The results were obtained by using Pearson correlations in order to examine the associations between carotid flow, CRF, and cognitive functions. Our preliminary results suggested that, carotid flow velocities (i.e., mean PSV and EDV) were not significantly correlated with CRF. No significant correlations between the Stroop test performance, MMSE and CRF were observed. Although all of the results in this study were not significant, shorter reaction times on the Stroop test were observed among those with higher CRF levels. Given the smaller sample size of the current study, utilizing larger sample sizes is encouraged for future research.

KEYWORDS

Carotid arterial flow velocities; Cardiorespiratory fitness; Superior cognitive functions

The effects of 12-weeks of a multi-modal exercise training program on cognitive flexibility in young adults

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ABSTRACT

Benefits of a single modal bout of exercise on cognitive function have been suggested, yet the effects of an exercise training program comprising multiple exercise modals (e.g., multi-modal exercise) on cognitive functions remain less examined. This study aimed to explore the effects of multi-modal exercise training programs, emphasizing various physical fitness components and social interactions, on young adults' cognitive flexibility involving their cognitive functions. 44 healthy young adults were assigned into either a multi-modal exercise group (MME, $n=22$) comprising aerobic, muscular fitness, and agility training, or into the traditional Tai-Chi exercise (TCE, $n=22$) group. All participants received a 100-minute exercise training program per week, for 12 weeks. The outcomes of cognitive flexibility [i.e., the response times (RT) and accuracy for switching and non-switching conditions] were assessed by using a task-switching test, before and after the 12-week exercise training. Additionally, physical fitness (i.e., aerobic, muscular endurance, and agility) were assessed. In order to examine the outcomes of the task-switching test and the physical fitness intervention, separate analysis of the covariance analyses (ANCOVA), adjusting for pre-training scores as covariates, were conducted. Significant group differences were observed on the RTs of the switching [$F(1, 41)=6.680, p<.05$] and non-switching [$F(1, 41)=5.222, p<.05$] conditions, with shorter RTs for the MME group, rather than the TCE group. No such difference was observed for accuracies. Additionally, the MME group demonstrated significant improvement in muscular endurance, compared to the TCE group [$F(1, 41)=11.637, p<.01$]; whereas, no significant differences were observed regarding aerobic fitness and agility. These results revealed that a 12-week multi-modal exercise training program might be more efficient for improving cognitive flexibility, as reflected by the shorter RTs during the switching and non-switching trials of the task-switching task. Notably, no difference in accuracies between the respective groups suggested no speed-accuracy trade-off. Although the exact underlying mechanisms are worth further examination, superior cognitive performance observed in the MME group, rather than the TCE group, might be partially due to the MME group's improved muscular endurance.

KEYWORDS

Shifting; Exercise training; Physical fitness

Mindfulness-based intervention to alleviate the stereotype threat of yoga participation among college students: a qualitative study

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ABSTRACT

Yoga has long been studied by psychologists, therapists, and medical scientists for its positive influence on people's lives, particularly in promoting people's mental well-being. However, instructors' demonstration of high flexibility or difficult poses may stop beginners from going back to yoga classrooms. The stereotype of yoga may impair their motivation, competence, and satisfaction. Unfortunately, few studies have been made regarding yoga stereotypes—how it affects the cognition, psychological state, and behavior of yoga participants. Strategies that may help alleviate the stereotype threat of yoga through mindfulness-based intervention are also yet to be established. As a result, the purpose of this study is 1) to explore college students' stereotypes of yoga, 2) to discover which of the stereotypes may impair college students' motivation, competence, and satisfaction in yoga classes, and 3) how mindfulness-based intervention can alleviate the stereotype threat of yoga. This qualitative study focuses on the context of yoga exercise among college students, analyzes data based on proven theories, and approaches the issue using methods from field studies, in-depth interviews, and mind mapping. Four male and eight female students took part in the study (age: $M = 23.6$ years, range: 23-25 years), with mindfulness-based intervention held once a week for 60 minutes over a period of 12 weeks. Participants described their yoga-learning experiences in semi-structured interviews, including their opinions on yoga, and the reasons why they were afraid or wanted to quit yoga. A 12-week mindfulness-based yoga intervention was conducted afterwards, with researchers observing and recording students' performance and reactions on a weekly basis. Finally, students participated in individual and focus group interviews, and were asked to hand in their learning portfolios as well as their mind maps after completing all courses. Thematic analysis was used to analyze the collected data. The results showed that the yoga stereotypes mainly include problems such as flexibility, physical fitness, gender differences, and religious beliefs. The findings in this research verified the effectiveness of mindfulness-based intervention in the context of yoga, which may be useful for future researchers and instructors to reduce students' psychological pressure and physical tension caused by yoga stereotypes. It is hoped that this study could help learners fully enjoy and gain satisfaction in yoga classes.

KEYWORDS

stereotype threat; mindfulness; motivation; yoga exercise; college students

Occupational content and stress of young fitness coaches in taipei – a pilot qualitative study

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ABSTRACT

The muscular fitness training course can be guided by one coach as a group or one-to-one course at a specified location. The main course of a muscular training were various which usually include 3 kinds of weight training, namely bodyweight training, free weights training, and machine weight training that with resistance loading from bodyweight only, tools like dumbbells or kettlebells, and fixed instruments, respectively. In recent years, there has been a growing trend of publics to participate in fitness workouts for health promotion and physical appearance improvement. Consequently, needs for space and manpower of the fitness industry were increased. By the same time, fitness coach became a popular occupation among young people. Thus, aim of the present study was set up to provide the decision-making references for people with needs of career orientation or fitness course consuming choices. Purposive sampling was conducted in this study. Six muscular fitness coaches who coaching more than 10 hours per week were recruited for in-depth interview. Data was analyzed and inducted according to the qualitative research norms. Findings were described as followings: 1. Practicing modes of interviewees were categorized as club-contract, non-chain studio contract, and self-employed freelance coaches. 2. In a muscular fitness course, 1 coach to 1 client or 1 coach to 2 clients was the common execution model. 3. Coached with working contract must promote courses in order to meet their sales performance which assigned by the department leader. However, self-employed coach can set performance goal by one-self. 4. Coaches think that to promote the safe and correct concepts and methods of fitness exercise and promote public health were their professional responsibility and philosophy, respectively. They also like to establish their social network through the occupation. 5. Positive coaching effectiveness from the client or matching of client's training goals was always the source of joyful feeling for coaches. On the other hand, sales performance requirement was main pressure source for coaches. According to afore mentions, the practicing mode, sources of accomplishment sense, and occupational philosophy are similar to different practicing type muscular fitness coaches. However, sales performance requirement usually affected contract-coaches as a psychological stressor.

KEYWORDS

purposive sampling; in-depth interview; club coaches; non-chain studio; freelance coaches

The effects about internet use behavior and internet addiction on mental health for university students majoring in sports.

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ABSTRACT

Internet use behavior and internet addiction may widespread presence in young generation with the rapid development of internet and 3C technology products. Excess Internet use behavior and internet addiction may affect not only academic performance but also mental health. Therefore, the purposes of this study were to investigate Internet use behavior and the effect of Internet addiction on mental health for university students majoring in sports. The study adopted online questionnaires to collect data. The measurements included three scales such as Internet use behavior scale, Chen Internet Addiction Scale (CIAS) and Mental Health Scale. The 202 valid responses were obtained from university students majoring in sports (97 males and 105 females). Data analysis methods included t-test, one-way ANOVA, Pearson product moment correlation and multiple regression analysis. The result showed that the prevalence rate of Internet addiction was 27% (large or equal 64). There were significant differences in mental health level between genders, and the score of female students was lower than males. There were significant differences on Internet addiction in different age participants (19 and 21 years old) and (21 and over 22 years old), and the score of 21 years old was higher than 19 and over 22 years old students. There were no significant differences among different academic achievement on Internet use behavior, Internet addiction and mental health. Moreover, significant positive correlation was found between Internet use behavior and Internet addiction; whereas a significant negative correlation between Internet use behavior and mental health was reported. In addition, Internet addiction was negatively correlated with mental health level. Furthermore, controlling for background variables (i.e., gender and age), the hierarchical regression analysis showed that Internet addiction had a complete mediating effect on the relationship between Internet use behavior and mental health. This study concludes that the Internet addiction may be a severe problem in campus. Students have more frequent use of Internet will result in higher level of Internet addiction and then have a lower mental health. This is a trend for the popularity and booming development of the Internet in this generation. Psychologists and the staffs of universities should help students learning how to use internet properly and how to plan their usage autonomously. Students' adaptive Internet use behavior will protect them from internet addiction but also enhance their mental health.

KEYWORDS

3C technology products;
academic achievement;
Internet

Understanding parents' perspectives on perceived constraining and facilitating factors of physical activity in children

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ABSTRACT

An adequate amount of physical activity is fundamental to the normal physical and psychological development of children. Understanding parents' perspectives on factors that affect children's physical activity is essential to successfully develop primary prevention measures to promote a healthy lifestyle. The present study used Ajzen's (1991) theory of planned behavior and Fishbein's (2000) integrated behavior model as a framework to examine behavioral, normative and control beliefs related to physical activity in children amongst parents of preschoolers. A semi-structured focus group interview guide was developed based on theoretical assumptions, methodological suggestions, and similar studies. Drawing on 18 qualitative focus group interviews with parents of preschoolers from 13 urban and rural Estonian kindergartens, we explored factors that perceivably affect the physical activity of their preschool children. We used both inductive and deductive principles of data analysis to extract major and subthemes related to factors that perceivably inhibit or enhance physical activity in children. Results highlighted parental behavioral, normative and control beliefs related to physical activity in children. The main themes identified include negative and positive affective responses to physical activity in children. Parents described unpleasant outcomes such as perceived incompetence and social comparison constraining children physical activity. On the other hand, the option to burn off their energy, meet new friends and experience positive emotions were seen as contributing to children's physical activity. Participants described various perceived benefits (e.g., learning social skills) and costs (e.g., pain, fatigue, injuries) of physical activity to children. Additionally, parents valued social agents such as peers or teachers and their own example as role models in facilitating physical activity in children. Furthermore, some beliefs related to screen time, individual differences, and children's low ability to regulate their emotions reflected parents' low perceived control over supporting children's motivation to be physically active. On the other hand, parents also suggested various strategies for overcoming different perceived barriers to physical activity. To support parents in facilitating physical activity in preschoolers, interventions should address the perceived constraints of physical activity and encourage them to shape a physically active lifestyle in light of these constraints.

KEYWORDS

physical activity; preschoolers; facilitators and constraints; perceived benefits and costs; parental beliefs

Effects of brain breaks video intervention on processes of change among Malaysians with Type 2 diabetes mellitus

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ABSTRACT

Brain Breaks are web-based videos of structured physical activity (PA) designed to promote an interest in learning and health promotion. Processes of change are the first psychological construct in the transtheoretical model (TTM): the outdoor or indoor, solo or by group activities done by the one who wants to evolve their behaviour. The purpose of this study was to assess the effects of the processes of change among people with type 2 diabetes mellitus (T2DM) by Brain Breaks, which is measured by the Processes of Change Scale-Malay (POC-M). This study was carried out in two research circumstances using the randomised, double-blind design and group of subjects: an intervention group with videos of Brain Breaks and a control group. Purposive sampling was performed in Hospital Universiti Sains Malaysia, Kelantan to recruit 70 T2DM patients (male = 39; female = 31) with a mean age of 57.6 (SD = 8.5). For a period of four months, PA participants were invited for day-to-day use in the Brain Breaks (10 minutes) video shared through a WhatsApp group. The questionnaires were answered five times by all participants in both groups: pre-intervention, first month and third month, and post-intervention. Repeated measures multivariate analysis of variance (RM MANOVA) was carried out for data analysis. The results displayed that the intervention group produced a significant difference of POC-M score for most of the time comparisons for both cognitive and behavioural factors with an increasing trend over time. Whereby, for the control group, behaviour factor presented with a non-significant difference of POC-M score such as between pre- and 1st month (p -value = 1.000) and 1st month and 2nd month (p -value = 0.090). There were also significant differences between the two groups for both cognitive (p -value < 0.001) and behaviour (p -value < 0.001) factors. Another comparison was the POC-M score between the two groups based on time. Both groups (intervention and control) showed significant differences in POC-M score from pre- to post-intervention time for cognitive and behaviour factors of POC. Therefore, Brain Breaks videos can be considered an effective intervention/instruments to escalate T2DM patients' behaviour change processes that could help them get closer to the physically active lifestyle.

KEYWORDS

Brain breaks; video exercise; processes of change; physical activity; type 2 diabetes mellitus

A bayesian analysis of goal orientation affecting flow states during physical exercise

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ABSTRACT

[Introduction] Many theories on achievement and motivation highlight the emotional responses to exercise as being critical for task achievement. Similarly, goal orientation influences the decisions that are most important in predicting achievement outcomes. There are two types of goal orientation: task orientation and ego orientation. Task orientation is the need to succeed at a task through one's effort and skills, whereas ego orientation is the need to demonstrate superiority and competence to self and others. In several studies, these two types of orientation scales are not significantly related. They are as likely to be high or low in both task and ego orientation as they are to be high in one and low in the other. Our focus was to investigate the impact of personal orientation on anticipated affective reactions in exercise and sports, and physical activity. The purpose of this research was to evaluate the extent to which personal tasks and ego orientation relate to flow states during exercise, when participants are well motivated and engaged in one or more activities. [Method] A total of 519 adults (251 men and 268 women) participated in this study. We obtained information about their physical activity and goal orientation using self-reported questionnaires. We calculated the posterior distribution and efficiently sampled the posterior probability density function using Bayesian analysis, which shows cause and effect, so that exercise motivation could be inferred from the measured data. [Results & Discussion] The results showed that in the 95% Bayesian equal-tailed credible interval (CI) for the parameters, for men, the expected a posteriori (EAP) estimates were 0.04 (post standard deviation [PSD] = 0.06, 95% CI = -0.07–0.15), and 0.83 (PSD = 0.06, 95% CI = 0.72–0.94) for ego orientation and task orientation, respectively. For women, the corresponding estimates were 0.17 (PSD = 0.05, 95% CI = 0.07–0.27), and 0.71 (PSD = 0.05, 95% CI = 0.61–0.81) for ego orientation and task orientation, respectively. We found that personal goal orientation impacted anticipated affective reactions to the flow states during exercise, with no significant differences in gender and age. Furthermore, our results demonstrated that ego orientation, compared to task orientation, leads to decreased flow states in exercise, and confirmed that men with a low sense of competence tend to be more task oriented.

KEYWORDS

goal orientation; physical exercise; flow state

The correlation between motor fitness and stroop task performance in children with preterm birth

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ABSTRACT

The incidence of preterm births accounts for approximately 11.1% of all newborns in the world. Preterm birth might not only render the brain vulnerable to dysfunction, but also adversely impact children's cognitive performance across a wide range of cognitive functions, specifically, executive function. Accordingly, knowledge of improving executive function in children with preterm birth is needed, in order to inform practice and policy. Notably, while the majority of evidence has shown the positive correlations between cardiovascular fitness and cognitive function in child populations, no research has yet specifically examined the relationships between various aspects of motor fitness and cognitive functions, specifically, executive function, in children with preterm birth. Accordingly, the present study aimed to explore whether various aspects of motor fitness might correlate with cognitive function (i.e., processing speed) and the inhibitory aspect of executive function in children with preterm birth. Thirty-six children with preterm birth (mean age = 9.60 years old) were recruited, and all participants underwent a battery of motor fitness tests assessing their muscular strength, muscular power, flexibility, and agility. Additionally, the processing speed and inhibition aspect of executive function was assessed by using the modified computerized Stroop task. The results revealed that children, who had higher scores on muscular strength, muscular power, and agility, demonstrated shorter reaction times during both congruent and incongruent conditions of the Stroop task, suggesting superior processing speed and inhibitory aspect of executive function. Yet, flexibility was not significantly associated with any condition of the Stroop test. In conclusion, higher motor fitness metrics (i.e., muscular strength, muscular power, and agility) were positively correlated with superior cognitive function in children with preterm birth, as reflected by the shorter reaction times during the congruent and incongruent conditions of the Stroop task. Further research is warranted for investigating the potential relationships between motor fitness and other aspects of executive function (e.g., shifting and updating), and potential underlying neurological mechanisms, using the neuroelectrical approach.

KEYWORDS

physical fitness; executive function; inhibitory control; the Stroop task

A comparative study of the department of physical education and non-physical education on the protective factors of cadets' School Adjustment in Military Schools' students of Taiwan

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ABSTRACT

The purpose of this study was to understand the differences in the protective factors of cadets' school adjustment between the department of physical education and non-physical education in military schools' students of Taiwan. Methods: The researcher randomly selected 384 students from the department of physical education and non-physical education of the army academy R.O.C by stratified sampling method, and the "cadets' school adjustment Inventory (CSAI)" compiled by Ma Yu Wen (2009) with good reliability and validity was used as a tool for data collection. Result: 1. There were significant differences in the cadets' school adjustment protection factors between the department of physical education and non-physical education in military schools' students due to different grades, and both had significant upward trend with the increase of grades. 2. In terms of the comparison between physical education students and non-physical education students in the same grade, the first-year physical education students in the "adaptation to senior cadets' instruction", "subject commitment", "academic self-efficacy", "organizational commitment" and "goal commitment" were significantly higher than the first-year non-physical education students. 3. In terms of the comparison of physical education students in each grade, the second-year physical education students are significantly higher than the first-year students in terms of "peer relationship", "academic self-efficacy" and "goal commitment". 4. According to the analysis of the protective factors of the cadets' school adjustment of non-physical students in each grade, it was found that the second grade was significantly higher than the first grade in terms of "subject commitment" and "organizational commitment". Conclusion: Because this study did not explore the impact of the unique characteristics of physical education students on the protective factors of cadets' school adjustment, future research can still verify the above findings or conduct a longitudinal study to explore the change process and influencing factors of the protective factors of physical education students' cadets' school adjustment.

KEYWORDS

cadets' school adjustment Inventory; military school; department of physical education

The effect of twelve weeks multicomponent exercise on mental state, functional physical fitness and quality of life in older adult with mild cognitive impairment.

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ABSTRACT

According to the official report of Taiwan Alzheimer disease association in 2019, 10-15% population of elderly adult with mild

KEYWORDS

mental health; dementia; successful aging

cognitive impairment will develop into dementia every year. Individual's maladaptive cognitive function not only influences personal physical and psychological health but also leads to the tremendous cost of social and public resources. Various programs had been developing with respect to the concern of illness prevention and health promotion. Among these programs, the effect of exercise on elderly adult's holistic health has been a topic of growing interest among health-relative researches due to its demonstrated relationship to the elderly individual's cognitive functioning, physical fitness, physical and psychological well-being, as well as the development of public policy. However, the effectiveness of multicomponent exercise intervention to elderly adult with cognitive impairment is still in vague. The purpose of present study is therefore to examine the effect of 12 weeks multicomponent exercise program on cognitive function, functional fitness and quality of life of the elderly with mild cognitive impairment. A total of 32 (28 females) community-living Taiwanese older adults (Mage = 74.59 ± 6.25 years old) with mild cognitive impairment participated in present study. 12-week multicomponent exercises program (twice a week) including various aerobic exercises and muscle strengthen trainings was applied to elders in experimental group (N = 18). Ascertain dementia 8, short-term health survey questionnaire and multiple criteria of physical fitness were measured before and after intervention. Following the 2 × 2 mixed design multiple analysis of variance, tests of simple main effect revealed that elderly adult's body mass index ($p = .002$), arm curl ($p < .001$) and quality of life ($p = .015$) in experiment group is better than participants in control group after 12 weeks. Further, elderly adult in experiment group had better performance on BMI ($p = .018$), 2.44m up and go test ($p = .028$) and sit-reach test ($p = .045$) after intervention. On the other hand, the logistic regression showed that elderly adult in experiment group indicated higher probability of dementia risk than participants in control group ($p = .040$) after intervention. In general, our findings, at least partly, provided further supportive evidence for the effectiveness of multicomponent exercise program on elderly adult with mild cognitive impairment.

The association of motor competence with cognitive flexibility processing in children with attention deficit hyperactivity disorder

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ABSTRACT

Introduction: Attention deficit hyper-activity disorder (ADHD) is one of the most common neurobiological disorders in school-aged children. Emerging research shows that those with ADHD often present with deficits in fine motor control and executive function.

KEYWORDS

executive function; motor fitness; mental flexibility; task-switching

In particular, previous studies have associated ADHD with performance deficits in set-shifting and task-switching paradigms, suggesting that ADHD is concomitant with cognitive flexibility—the ability to switch attention away from previously relevant representations towards newly relevant ones. Recent studies further clarify the positive association between motor competence and cognition. There is evidence that motor and cognitive abilities may share similar underlying cognitive operations such as sequencing, monitoring, and planning in children. Whether the beneficial effects of motor competence in children with ADHD can be extended to other subcomponents of EF, cognitive flexibility in particular, remains unexplored. Therefore, the purpose of the present study was to examine the relationship between motor competence and task-switching performance by comparing higher and lower motor competence in children with ADHD. **Methods:** A total of 53 participants, all previously diagnosed with ADHD, were assigned to either the higher motor competence (HMC) ($n=26$) or lower MC group (LMC) ($n=27$) based on their motor competence as measured by the Movement-ABC2. Cognitive flexibility was measured by the task-switching paradigm. **Results:** For reaction times (RT), the HMC group showed shorter RT than the LMC group in the global effect condition. Whereas no effects were found in the local effect condition. Furthermore, the HMC group showed higher accuracy than the LMC group in the global and local effect conditions. **Conclusion:** Children with ADHD possessing higher levels of motor competence have better cognitive flexibility as assessed by task switching. Our findings suggest that motor competence may play a beneficial role in the cognitive performance of switching in children with ADHD.

Does the validity of the PAQ-C change depending on whether it is compared to total or moderate-to-vigorous physical activity? a preliminary study

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ABSTRACT

Measuring children's physical activity (PA) in free-living conditions constitutes a highly challenging area for PA surveillance. Accelerometers and pedometers have shown to provide valid and reliable PA data in this population, but these instruments are not ready to replace self-report methods at present. The Physical Activity Questionnaire for Children (PAQ-C) has been placed as a promising tool for assessing PA in children. This preliminary study explores if the validity of the PAQ-C varies depending on whether it is compared to total or moderate-to-vigorous PA (MVPA) measured by accelerometry. A total of 430 students ($M_{age}=10.15$, $SD=0.96$; 51.63% girls) from 4th to 6th grades of seven public primary schools were recruited from the Castilla-La

KEYWORDS

Children; Surveillance; School; Self-Report; Exercise

Mancha Physical Activity Observatory (OBAFI) project and filled in the PAQ-C. Total and MVPA were measured using accelerometers for 7 days. During the data collection process, several specific administration strategies were followed by research assistants. Spearman's rank correlations coefficients (r) were calculated to test the associations among weekly total PA, MVPA and the PAQ-C. The PAQ-C showed moderate but significant associations ($p < 0.001$) with children's total PA and MVPA. The magnitude of the associations did not differ between both types of PA intensities for the whole sample ($r = 0.26$ and $r = 0.28$, respectively). However, when analyzing these variables by age, 12-year children exhibited larger associations between the PAQ-C and total PA ($r = 0.43$, $p < 0.05$) than with MVPA ($r = 0.33$, $p > 0.05$). Additionally, girls showed higher correlations coefficients than boys for the relationships between the PAQ-C and total PA ($r = 0.31$, $p < 0.001$, vs. $r = 0.16$, $p < 0.05$) and MVPA ($r = 0.31$, $p < 0.001$, vs. $r = 0.17$, $p < 0.05$), although these coefficients did not differ between both PA intensities. Preliminary results showed no substantial differences in the convergent validity of the PAQ-C when comparing it with total PA or MVPA. However, the PAQ-C could better collect perceptions of total PA rather than those related to MVPA as children get older, especially in girls. Future research should investigate age- and sex-based differences in the convergent validity of the PAQ-C in young populations.

Novelty frustration and negative outcomes in physical education lessons

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ABSTRACT

Physical Education (PE) represents an ideal context to provide students with affective experiences that can positively impact their lifestyles. The satisfaction of the need for novelty, recently proposed as a candidate need within basic psychological needs (BPNs) theory, has been positively/negatively associated with enhanced/impaired students' wellbeing in PE, respectively. However, no research has explored whether frustration of novelty is also positively associated with maladaptive consequences for students in this context, which is a necessary criterion to be included within BPNs theory. The aim of this correlational study was to analyze whether the frustration of novelty was associated in a similar way than the three BPNs (autonomy, competence, and relatedness) with students' maladaptive consequences in PE. A total of 533 students ($M_{age} = 14.47$, $SD = 1.34$; 56.66% female) from eight secondary schools located in the southeast of Spain completed questionnaires assessing their BPNs frustration, novelty frustration, and diverse maladaptive consequences in PE contexts (i.e., amotivation, boredom, negative affect, entity belief,

KEYWORDS

Adolescents; Self-determination theory; Autonomy; Competence; Relatedness

fear of failure, somatic and social physique anxiety, worry, concentration disruption, and oppositional defiance). Data were collected through a free online survey platform (Google Forms). Pearson's correlations and linear regression analyses were calculated to test the associations among these variables. Sex, age and race were introduced as independent variables within the regression model to control their effect. The correlation coefficients for novelty frustration were similar to those found for BPNs frustration concerning maladaptive consequences in PE students. Particularly, linear regression analyses showed that frustration of novelty positively predicted amotivation ($\beta = .11$, $p = .040$), boredom ($\beta = .23$, $p < .001$), entity belief ($\beta = .12$, $p = .047$) and concentration disruption ($\beta = .12$, $p = .047$). Results support need for novelty as an additional candidate need within BPNs theory, since its frustration was positively related to negative outcomes in PE. Future research should analyze these relationships using longitudinal designs. Likewise, future interventions should include strategies to build a novelty-support environment within PE lessons. In this sense, this study ends by proposing some practical strategies which could be useful for PE professionals to promote support for novelty (instead of frustration) in their students.

Effect of the SNS-based physical activity-related psychological intervention on physical activity and psychological constructs among inactive university students

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ABSTRACT

In Korea, not only was there a study that verified the effectiveness of developing walking and exercise programs based on a smartphone app, but also there is ongoing research to enable the effective application of these programs within clinical settings. Nevertheless, studies using social media based on integrating physical activity and the TTM constructs are lacking in Korea. The current study investigated the effects of the physical activity-related psychological intervention via social network service (SNS) on physical activity and psychological constructs in inactive university students. Thirty inactive university students 30 ($n = 30$, mean age = 22.9 years, $SD = 1.9$) participated in the 12-week intervention and received the physical activity-related psychological strategy via SNS. The physical activity levels, stages of physical activity, self-efficacy, pros, and cons were measured at the three time points (baseline, after 6 weeks, and after 12 weeks). A McNemar chi-square (χ^2) test was carried out to investigate the difference in the distribution of the physical activity stage over 12 weeks. A repeated measures ANOVA was performed to investigate changes in the levels of physical activity

KEYWORDS

Physical activity;
Psychological strategy; Social network service;
Transtheoretical model;
Quasi-experiment

and psychological constructs (i.e., self-efficacy, pros, and cons over 12 weeks. Post hoc Bonferroni-corrected tests were used to identify significant differences between each of the three time points. Results indicated that the number of inactive university students gradually decreased across the three different time points, and that a total physical activity of inactive university students significantly increased over the 12-week intervention. In addition, pros and self-efficacy significantly increased but cons gradually decreased over the intervention. The current study is the significant trial to employ the intervention being delivered using a currently prevalent SNS-based modality based on the TTM as an organizing framework in inactive university students. Especially, as the medium of intervention was electronic (i.e., SNS), this can be recognized a rather novel and less studied intervention modality with the physical activity domain. The current study confirmed that the physical activity-related psychological intervention delivered by SNS was feasible for changing physical activity and its related psychological constructs. Therefore, further research should continue to investigate new ways to capitalize on the SNS features and functionalities that facilitate physical activity engagement and its longer-term adherence, and positively change psychological attributes related to physical activity.

Meta-analysis of emotional experience after acute high-intensity interval training and moderate-intensity continuous exercise

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ABSTRACT

Objective: To comprehensively analyze the influence of High Intensity Interval Training (HIIT) and Moderate-intensity Continuous Training (MICT) on post-exercise emotional experience by using meta-analysis method, so as to provide references for the national fitness plan and the formulation of exercise programs and exercise prescriptions for different populations. **Methods:** The existing papers was searched and selected according to the principle of PRISMA . Finally, 12 papers were included for meta-analysis. Revman 5.3 software and Stata software 14.0 were used to analyze the outcome indicators of the included papers. Multi-factor meta-regression showed that the p value of maximum oxygen uptake, intensity variable, BMI, measurement method and nationality was greater than 0.05, and the p value of high intensity intermittent activity level was less than 0.05. Further comparative analysis revealed that the interaction between HIIT level and BMI level may be the main source of heterogeneity. **Conclusion:** 1) Compared with HIIT, MICT showed more positive affective response after exercise. There was no significant difference in post-exercise enjoyment between the

KEYWORDS

HIIT; MICT; emotional experience

two types of exercise. 2) In terms of affective response and time efficiency, low and moderate magnitude HIIT exercise is suitable for healthy and overweight people in China. 3) Overweight people completed the same affective response of low magnitude HIIT as the MICT, and completed the same affective response of high magnitude HIIT as the MICT; Compared with MICT, healthy people did not experience poorer affective response when completing low and medium HIIT.

The relationship of physical fitness and motor competence with behavioral and neuroelectric indices of attention in preschool children

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ABSTRACT

A growing body of research has demonstrated the positive associations of physical fitness and motor competence with cognitive and brain function in school-aged children. This compelling evidence has stimulated the development of physical activity-based interventions aimed to promote these fitness and motor skills while enhancing cognitive and brain development in childhood. However, the role of physical fitness and motor competence to early childhood cognitive and brain development has remained surprisingly less understood despite young children exhibit rapid postnatal brain development and greater neural plasticity in response to enriched environment and experiences. Therefore, the purpose of this study was to examine the relations of physical fitness and motor competence with P3 and alpha desynchronization (ERD), two neuroelectric indices of brain development underlying top-down controlled attention, in a sample of 4-6 years old children. Seventy-six preschool children (49 boys, mean age = 68.4 ± 4.8) were recruited to complete physical fitness and motor competence test batteries as well as an auditory oddball task while electroencephalogram (EEG) was recorded. Hierarchical regression was conducted to determine the unique contribution of physical fitness and its sub-components (e.g., muscular power, muscular endurance, flexibility, balance) as well as motor competence to behavioral performance and neuroelectric indices during the cognitive task. After controlling for confounding variables (e.g., age), increased muscular power, muscular endurance, physical fitness, and motor competence were associated better attentional task performance. Analysis on neuroelectric indices showed that muscular endurance was related to increased P3 amplitude, while the increases in physical fitness and motor competence were associated with greater upper alpha (10-12 Hz) ERD following the stimulus evaluation and response selection. Further, the negative associations of physical fitness and motor competence with task response time were

KEYWORDS

EEG; P3; Alpha ERD; Auditory Oddball; Physical Performance

mediated by the upper alpha ERD. These findings highlight the importance of early childhood motor competence and physical fitness, especially muscular endurance, to neurocognitive function. Specifically, higher levels of muscular endurance may be beneficial for the neural inhibition function in facilitating the allocation of attentional resource to evaluate cognitively demanding events, while higher levels of overall physical fitness and motor competence may be positively associated with the ability to redirect attention in preparation for the upcoming cognitive challenges.

Acute effects of moderate-intensity aerobic exercise on inhibitory control and its underlying processing efficiency

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ABSTRACT

Introduction. An acute bout of moderate-intensity exercise has been identified as an effective strategy for transiently enhancing inhibitory control, an ability to suppress irrelevant distractors while focusing on relevant information in facilitating goal-directed behavior. However, whether acute exercise has benefits to the processing efficiency underlying inhibitory control processes has remained unknown. **Purpose.** The purpose of this study was to employ a go/no-go version of the redundant-target task to evaluate inhibitory control and its underlying processing efficiency in response to a single bout of moderate-intensity aerobic exercise. **Methods.** Using a within-subject crossover design, 17 participants (female = 11, age = 21.4 ± 2.2 years) were recruited to complete a single bout of 20 minutes of moderate-intensity (65-75% maximum heart rate determined on a baseline fitness testing session) aerobic exercise and a sitting control condition on separate days in counterbalanced order. Before and after each intervention condition, participants performed a go/no-go redundant-target task, which required a response (e.g., button press) to either one (single-target [e.g., a dot in circle shape OR green ink], 50% probability) or two (redundant-target [e.g., a dot in circle shape AND green ink], 25% probability) targets while withholding a response to the absence of a target (no-target [e.g., a dot in x shape AND blue ink], 25% probability). This particular task was designed to enable System Factorial Technology (SFT), a theory-driven modeling tool to evaluate the information processing efficiency underlying perceptual decision-making as well as to explore acute exercise effects on the decision efficiency. A 2 (Condition: exercise, control) × 2 (Time: pretest, posttest) × 3 (Target: no, single, redundant) ANOVA was performed to analyze the acute exercise effects on response accuracy and response time. A 2 (Condition: exercise, control) × 2 (Time: pretest, posttest) ANOVA was performed to analyze the

KEYWORDS

Physical Activity; Executive Function; System Factorial Technology

acute exercise effects on the capacity coefficients and factor scores of principal components derived from SFT. Results. A significant 3-way interaction was observed for response accuracy. The decomposition of this interaction showed a selective decrease in no-target accuracy from the pretest to posttest for the control condition while no-target accuracy was maintained from the pretest to posttest for the exercise condition. No significant effect involving Condition x Time interaction was observed for response time and SFT indices. Conclusion. These findings suggest that a single bout of moderate-intensity aerobic exercise does not alter the processing efficiency underlying inhibitory processes but selectively counteract the time-related decrements in inhibitory control.

Mediating effects of social support on the relationship between physical activity and physical environment in adults

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ABSTRACT

The current study aims to confirm the mediating effect of social support in the relationship between physical activity and physical environment for adults. This study was conducted on a total of 550 men and women over 20 years old living in S city. According to the purpose of the current study, adult males and females 20 years of age or older among the users of sports and cultural facilities in S-gu, Seoul were selected as the population through the random sampling method among non-probability sampling methods. Through these procedures a total of 514 people (male: 56.6%, female: 43.40%, average age:) Data of 37.8 years old, standard deviation: 8.92) were used in this study. Social support questionnaire, physical environment questionnaire, and physical activity questionnaire were used as measurement tools. Descriptive statistical analysis was performed to see the general characteristics of the study subjects, and validation and reliability analysis of the questionnaire were conducted through exploratory factor analysis. Correlation analysis was conducted to confirm the relationship between social support, physical environment, and physical activity variables, and mediating effects were analyzed according to the 3-step regression to confirm the relationship between social support and physical environment and physical activity. Verified. Finally, the significance of the mediating effect was secured through the validation of Sobel's significance. All these analyzes used SPSS 24.0. As a result of the study, it was found that the physical environment directly affects the physical activity of adults, and the mediating effect of social support was confirmed in the process of the physical environment affecting the physical activity. Based on the results of this study and previous studies, it is necessary to encourage physical activities so that family and friends can participate in regular physical activities and to

KEYWORDS

social support; physical environment; physical activity

prepare conditions for participation together. Is thought to be able to act as a factor that makes social support more active. Therefore, it is believed that the relevant authorities should make efforts to promote health by promoting physical activity of local members through the expansion of sports facilities with convenience and close proximity to the place of residence in the local community.

Effects of leisure-time physical activity on happiness: a verification from taiwan perspective

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ABSTRACT

Happiness is one of the essential requirements of humans. Studies have indicated that people participating in physical activity in their leisure time could provide physical fitness benefits and enhance mental functions and emotional states, such as happiness. Zhang and Chen (2019) systematically reviewed more than 20 studies and pointed out that as little as 1-time leisure-time physical activity per week significantly increases one's subjective happiness. However, is 1-time engagement per week the optimal cutoff for happiness? It was not mentioned in their review. Moreover, the effect size of leisure-time physical activity has never been discussed in the review. Therefore, the present study aimed to verify previous study findings and provide the effect size of leisure-time physical activity on happiness. A secondary database was utilized in order to achieve the aim of this study. An integrated model was conducted by using the ROC curve analysis and binary logistic regression analysis. 11,163 of the data from the 2018 physical activity annual survey in Taiwan was applied. Results pointed that participating in leisure-time physical activity one time per week may be an ideal cutoff with an odds ratio of 1.528 ($p < .001$) to predict happiness, which shown a consistent result with previous studies. In other words, our analysis verified the previous findings from a very different way of secondary database usage. However, individual characteristics, such as subjective health status and occupation types, significantly confounded the relationship between leisure-time physical activity and happiness. Furthermore, some crucial variables were unable to be analyzed in the present study. For example, economic status, social behavior when engaging in leisure-time physical activities, the motivational background of the participants, etc., have been reported to influence happiness. Future studies may focus on the possible confounders and their paths on the relationship.

KEYWORDS

Mental health; positive psychology; exercise; leisure activity

The effects of acute multiple-modality exercise on cognition among obese young adults: a pilot study

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ABSTRACT

Obesity leads to an increased risk of mortality and various physical problems. The adverse obesity effects were also found to impact mental health and cognitive functions. The beneficial effects from chronic exercise among obese youth have been documented. In addition, a few studies have extended the current knowledge regarding exercise and cognition in relation to obesity from a chronic exercise to an acute exercise assessment model. The positive effects of acute single modality exercise on cognitive functions are different from the effects of multiple-modality exercise. The purpose of this pilot study was to evaluate the effects of acute multiple-modality exercise on cognitive functions among obese young adults. Five obese young adults (age = 21.4yrs, SD = 2.7) were recruited. All participants were required to complete a 30-minute acute multiple-modality exercise, including 5-minutes of jogging, 10-minutes of stretching, 10-minutes of mind-body exercise, and 5-minutes of relaxation. The inhibitory and planning aspects of their cognitive functions were assessed by using the Stroop Test and the Tower of London Test, at baseline, and after a 30-minute single bout of exercise. The results revealed that, regarding the Stroop Test, shorter response times were observed for congruent (ES = 0.97) and neutral (ES = 0.39) conditions, following the acute multiple-modality exercises, compared to the baseline. Regarding the Tower of London Test, better performances for the total move score (ES = 1.13), total initiation time (ES = 0.63), the planning-solving time (ES = 0.74), and total executive time (ES = 0.69) following acute multiple-modality exercises, were observed, compared to the baseline. Our findings suggest that there are beneficial effects on the inhibitory and planning aspects of cognitive functions, generated from acute multiple-modality exercise in obese younger adults. Future research with larger sample sizes and other types of cognitive functions and different populations is recommended in order to conduct evaluations toward a better understanding of the effects of acute multiple-modality exercise on cognitive functions.

KEYWORDS

Acute exercise; Cognitive function; Multiple-modality exercise; Obesity

Inspiration for group fitness curriculum design from the participation motivation of the elderly

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ABSTRACT

The United Nations reported in 2019 that since the elderly population in the world is growing rapidly, Taiwan is expected to enter a super-aged society by 2025. As medical technology advances, the average lifespan will also increase. However, the number of years of unhealthy survival could be as long as eight years, which makes the health of the elderly an important issue nowadays. Physical exercise can promote the health of the elderly, improve obesity, and prevent fall and fall-related injuries. Therefore, helping the elderly establish fitness habits and designing appropriate and effective courses are the main goals of active ageing. The purpose of this research was to explore the motivation of senior citizens to participate in fitness courses. Field study and semi-structured interviews were conducted in this qualitative research, including both individual and focused interviews. The participants were two males and two females, who live in communities and are capable of living alone. They exercise at least two times every week and are senior citizens aged 65 or above. Coding, inductive reasoning, analysis, and discussion are done according to the interviews. The results showed five motivations the elderly have for sport participation: enjoyment, competence, relatedness, improvement of posture, and physical ability. Another significant finding of this study was that most elderly people realize the importance of sports for health and will arrange simple physical activities in their life. Nevertheless, they could not carry out proper fitness exercise by themselves owing to the lack of professional knowledge. As a result, this study suggested that group fitness courses should attach importance to constructing a friendly environment and a support system for posture improvement, which can help develop fun and easy physical fitness courses. Such courses should also follow the principles of safety and effectiveness to increase physical and mental health of the elderly, and enhance their participation motivation, satisfaction, and well-being. The conclusion of this study can be used as a reference for curriculum designers, sports instructors, and school teachers for future research and curriculum designs.

KEYWORDS

qualitative research; fun fitness; active ageing; guidance curriculum; fitness for the elderly

Exercise psychology research by taiwanese scholars over three decades: a quasi-systematic review

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ABSTRACT

Purpose: To explore the status of Taiwanese scholars' research in the field of exercise psychology in the past 30 years, to provide an overview of the research, and to share our experiences with the international community regarding Taiwanese research in exercise psychology. Method: With modifications of Cooper's

KEYWORDS

physical activity; cognitive function; mental health

(2016) methodological instructions in research synthesis, we collected, categorized and analyzed Taiwanese scholars' publications in the field of exercise psychology in the past three decades. We searched five databases (SPORTDiscus, PsycINFO, MEDLINE, SocINDEX, and ERIC) by using the following combination of keywords: "(exercise OR physical activity) AND psychology AND Taiwan". The search was restricted between 1990 and 2020. To broaden our searching coverage, we also searched all of the articles published in the 1990 to 2020 period in the TSSCI journals that in the areas of physical education, sports science, and kinesiology. The names of the journal are as follows: (a) Physical Education Journal, (b) Sport & Exercise Research, and (c) Bulletin of Sport and Exercise Psychology of Taiwan. Results: A total of 355 papers qualified for further analysis. Most selected papers were quantitatively-oriented. Also, we found both international and domestic journals had different feature in terms of participants, research methods and research topics. Further, we found that 73 papers (20.56%) examined "theoretical models of exercise behavior"; 271 papers (76.34%) examined "psychological effects of exercise"; 95 papers (26.76%) investigated "social cognition in exercise"; 272 papers (76.62%) studied "exercise and specific population"; and 20 papers (5.63%) were classified as "applications/other." Furthermore, in international journals, 140 papers (61.40%) were ranked as Q1; 57 papers (25.00%) as Q2; 27 papers (11.84%) as Q3, and 4 papers (1.75%) as Q4. Discussion: To share Taiwanese research with the international community, we used a research synthesis to offer an overview of Taiwanese research in exercise psychology. It was found that Taiwanese scholars' research in exercise psychology has unique features and topics. We concluded that government policy and research grants may explain the research directions and topics selected. We suggested that Taiwanese scholars may expand their research beyond these limitations and called future research may adopt similar method but with more data to offer a broader and deeper overview.

A systematic review and meta-analysis of the effects of outdoor education programs on adolescents' self-efficacy

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ABSTRACT

Background: Adolescence is an important stage for life development, in which young people transition from childhood to adulthood; and, in this stage, adolescents interact with significant others, such as peers, parents, family members, teachers, and adult leaders, to learn social skills, life skills, and community roles. While much research has found Outdoor

KEYWORDS

experience learning; adolescents; meta-analysis; self-concept

Education Programs (OEPs) to be beneficial to adolescents' self-efficacy. However, we do not know the effect size and magnitude of OEPs, or whether the effects were moderated by participants' characteristics, outcome measures, and research design. Purposes: The purposes of this study was to evaluate the effectiveness of OEPs on adolescents' self-efficacy through systematic review and meta-analysis of the existing literature. Where data were available, a meta-analysis of the studies was carried out taking participants, interventions, comparisons, measures, outcomes, and study designs into consideration. Methods: Following the guidelines for synthesis research and meta-analysis suggested by Cooper (2016), we searched six major electronic databases: PubMed, Scencedirect, Medline, PsycArticles, and Behavioral Sciences Collection of EBSCO, and Eric. Using the Methodological Index for Non-randomized Studies (MINORS), we evaluated selected papers' quality. We estimated the effect size of the selected studies with a 95% confidence interval (CI), I-squared (I²) for heterogeneity analysis, and we analyzed publication bias by Egger's test. We found a total of 12 studies with 2,642 participants eligible for final analysis. Results indicated a high level of heterogeneity (I-squared value = 82.474) among selected studies that were of medium to a high quality in research design. Meta-analyses showed that adolescents participating in outdoor education programs enhanced their self-efficacy with a medium effect size (Hedges's $g = 0.597$) but it was moderated by participants' mental health status, length of experiments, study groups, and intervention duration. Further, we found no evidence of publication bias (Egger: bias = 2.001, 95% CI = -0.736 to 4.739, $p = 0.137$). Conclusions: OEPs bring lots of benefits to adolescents' psychosocial development. We suggested OEPs leaders carefully design their activities in line with Bandura's (1977, 1986) model and sources of self-efficacy. By doing so, participants may not only enjoy the activities but also boost their self-efficacy and psychosocial development.

Motivation for exercise and physical activity of child-rearing mothers in Japan

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ABSTRACT

The study aims to examine the relationship between motivation for exercise and physical activity among child-rearing mothers in Japan. Regular participation in physical activities helps in keeping optimal physical and psychological well-being. However, child-rearing mothers in Japan showed lower participation levels in physical activities compared with the general population, although there is a broad body of scientific research emphasizing the role of physical activity concerning health. Therefore, understanding the factors that affect one's participation in and maintenance of physical activity is important. Motivation plays an

KEYWORDS

self-determination theory; motivation; physical activity; exercise; child-rearing mothers

essential role in physical activity and exercise. Self-determination theory (SDT) is a popular theoretical framework for analyzing people's motivation for exercise. Moreover, multidimensional conceptualization of intrinsic and extrinsic motivation is one of the aspects of SDT that continues to gain interest. In this regard, the organismic integration theory (OIT), a part of SDT, hypothesizes that several types of motivation exist, which vary along a continuum based on the degree of self-determination. An impressive body of research supports the theoretical distinction regarding SDT. In terms of physical activity, autonomous motivation (i.e., intrinsic motivation, integrated regulation, and identified regulation) is linked with enduring habit formation. A survey involving 95 child-rearing mothers in Japan was conducted using a cross-sectional, non-experimental design. The results of the multiple regression analyses indicated that autonomous motivation via exercise predicted the amount of physical activity. Furthermore, β coefficients indicated that integrated regulation and identified motivation were salient predictors of the level of physical activity. However, intrinsic motivation did not significantly contribute to predicting the level of physical activity of the participants. In relation to the level of physical activity, the regression models revealed limited support for the role of controlled motivations or amotivation. Overall, the results of the study indicated the application of SDT to advance our understanding of psychological mechanisms that affect exercise motivation in child-rearing mothers in Japan. The findings in the present study may contribute to guiding the development of interventions focused on physical activities for child-rearing mothers in Japan.

Pilates as a non-pharmacological therapeutic intervention strategy for elders with cancer in hospital care

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ABSTRACT

Introduction: A person going through the process of aging must keep being active, through perfecting and seizing health opportunities, participation and security. Acknowledging the importance of physical exercise as a non-medicated and non-pharmacological therapeutic intervention strategy for elders in Health Care, new exercise proposals and methodologies are suggested for this intervention. In this context, the Pilates Method is brought forth which, due to its characteristics based on Controlology and global work in all exercises, also for looking at the person beyond quantitative data, focusing on a body-mind-spirit interaction, it has been indicated by several professionals,

KEYWORDS

Pilates; Cancer; Health Care

gaining adepts all over the world. However, the method is still little studied when compared to other exercise methods, mainly if we consider health care and psychosocial aspects. Purpose: This study has a mainly qualitative approach and its goal is to observe and understand the subjects' experience. Methods: The research universe was composed by 12 individuals with a cancer diagnosis who were inserted in Health Care. These individuals have volunteered to participate in the Pilates Extension Project offered by the responsible for this research in a Belo Horizonte hospital. As part of the understanding of how physical exercise, in this case the Mat Pilates, can contribute to life quality in the social and psychological context; and how these subjects interpret their experience, a semi structured interview and a participant observation were made. The interviews were made before the beginning of the Pilates Method intervention and three months after its conclusion. The technique used for the interview analysis was the dialectical hermeneutics, which makes the synthesis of the comprehensive and critical processes searching for the meaning comprehension that occurs in the communication between human beings, having language as its central core. Results: The identified analysis categories were: "Pilates: an opportunity"; "Interpreting health"; "Interpreting the disease"; "Disease: news x acceptance"; "Pilates is movement"; "Pilates and socialization" and "Pilates: body-mind-spirit". Conclusion: Through the discussion of these categories, it was possible to conclude that the Pilates Method is an important coping strategy for elders with cancer in Health Care, being essential to elaborate strategies for its insertion in the hospital context.

The association between generalized anxiety disorder and smartphone overdependency syndrome in adolescents' physical activity

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ABSTRACT

Decrease of mental health and lack of physical activity have been recent trends in Korean society. The outbreak of COVID-19 in 2010 further facilitated these trends during the last couple of years. The fear of COVID-19 introduced serious physical, and psychological crisis all over the globe, changing the ways we behave in daily life. While Korean society displayed relatively successful disease control, policies like social distancing are prohibition of private gathering are becoming the chronic trend. Thus, it is a time to consider the effects of such policies in addition to the spread of the disease itself. One of the most significant impact of current social regulation is the prolonged effects of distancing and its effects on mental health, and this problem is more pronounced among adolescents. Introduction of on-line classes is an abrupt change with a scale that has never

KEYWORDS

Adolescent; Physical Activity; Mental Health

been experienced previously. The level of physical activity is probably the most significant changes these adolescents may experience in this situation. The decrease of overall activity level associated with increased sitting behavior pattern and changes in sleep pattern became social rapidly became problems among adolescent students. Therefore, in this study, we tried to identify how the mental health factors such as stress, depression, anxiety, addictive mobile-phone use and suicide are influenced by the lack of physical activity introduced during this COVID-19 period. Using the 2020 Korean Ministry of Health and Welfare survey of adolescents' health behavior, we have examined how the level of physical activity influenced various mental health factors among Korean adolescents. Physical activity, sitting behavior, and sleep time data were extracted while happiness, perceived stress, overall anxiety disorder, phone-use addiction, suicide data were used as mental health variable. In addition, factors like gender, school year, and financial status were also examined. Chi squared test, One-Way ANOVA were performed to compare means, and logistic regression analyses were performed for each mental health variable. The main results confirmed the predictive roles of physical activity, sitting behavior, and sleep time on mental health factor. Also, the level of physical activity predicted the overall anxiety disorder, depression and suicide factors. On the other hand, the sleep time did not influence the mental health. Based on these results, we can analyze the factors influencing mental health with the recent social context, and the importance of physical activity could be re-emphasized.

Using profiling of motives to examine individual and group trends in participation in physical activity

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ABSTRACT

Regular involvement in physical activity (PA) has been consistently associated with a range of psychophysiological health benefits (WHO, 2021). Despite this, globally, around half the adult population does not engage in sufficient and sustained PA. Children and adolescents' participation in traditional forms of PA are also declining (Hu et al., 2018). Physical inactivity has been found to be associated with increased risks for several chronic conditions and mortality (Roychowdhury, 2020). Declining participation in PA not only means that people are less likely to gain the desired health benefits, but it also suggests that they are more likely to develop health conditions, especially given that lifestyles globally have become increasingly sedentary. One factor that has been found to play a key role in promoting and maintaining PA involvement is motivation (Morris & Roychowdhury, 2020). It has been reported that higher levels of motives for PA participation are associated with engagement in

KEYWORDS

physical activity; participation motivation; profiling; PALMS; health

larger amounts of PA among youth and adults (Morris & Roychowdhury, 2020). Researchers have also found that different patterns of motives are associated with sustained participation in different types of PA (Roychowdhury, 2018). It is, therefore, important to understand what motivates individuals to participate in PA and the factors that influence motives for participation in PA, so that health researchers and practitioners can design appropriate and effective interventions to target inactivity and increase PA involvement and adherence. However, research depicting the relationship between participation motivation and involvement in PA has not been presented in a concise, consistent, or coherent manner (Morris et al, 2019). Another challenge for researchers and applied practitioners is to develop techniques that would suitably advise participants about engaging in appropriate forms of PA, as indicated by their motives for PA participation. Such advice may lead to long-term adherence, satisfaction, and well-being. The present paper outlines a clear method of displaying motivational profiles based on the Physical Activity and Leisure Motivation Scale (PALMS; Morris & Rogers, 2004). Recognition and use of a standard way of representing individual and group patterns of motives for participation will permit researchers to readily compare their results with existing research, and practitioners to easily match individuals' profiles with established group trends to recommend the most suitable types of PA. We demonstrate how different motivational profiles may be utilized to arrive at individual and group comparisons. We also discuss and recommend ways in which profiles can be used to promote long-term PA.

Physical activity and irrational procrastination in chinese college students: the mediating effect of perceived stress

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ABSTRACT

Introduction: Irrational procrastination, an explicit manifestation of some mental health conditions, was officially demarcated in the field of psychology in the 1970s (Owens, Bowman, and Dill 2008). Irrational procrastination was defined that an maladaptive behavior in which an individual involuntarily delays a predetermined action without a clear reason (Kandemir 2014). Studies have shown that long-term procrastination can also trigger negative emotions such as anxiety, depression, guilt, and self-blame (Sirois, Eerde, and Argiropoulou 2015). Nowadays, irrational procrastination is common among college students (Onwuegbuzie 2000), and more than other groups of people (Steel 2007). Physical activity had a positive correlation with irrational procrastination (Codina et al. 2020; Shi et al. 2021). At the same time, perceived stress was thought to be one of the

KEYWORDS

physical activity; irrational procrastination; mediating effect; college student

predictors of irrational procrastination (Khalid et al. 2019; Kim and Seong 2017), perceived stress can lead to more incidence of irrational procrastination and more serious irrational procrastination (Wartberg, Thomasius, and Paschke 2021). Therefore, it is necessary to investigate whether perceived stress moderates the correlation between physical activity and irrational procrastination in order to explore the influence mechanism of them. Purpose: The previous studies shown that there are correlations between physical activity and irrational procrastination. But less has documented about their potential relationships. This study was investigated the mediating effect of perceived stress on the association between physical activity and irrational procrastination among Chinese college students, even after controlling age, drinking, and smoking usage. Methods: A total of 6788 participants who were freshmen and sophomores (age = 18.70 ± 0.87) came from three public Chinese universities in this study. Physical activity, perceived stress, and irrational procrastination of participants were respectively measured by International Physical Activity Questionnaire Short Form (IPAQ-SF), Perceived Stress Scale—10 Items (PSS-10), and Irrational Procrastination Scale (IPS). Age, tobacco, and alcohol use were used as covariates. Statistical analyses were performed using SPSS 25.0 and PROCESS 3.5. Results: Perceived Stress plays a mediating role in physical activity and irrational procrastination in males ($\beta = -0.0014, -0.0024 \sim -0.0004, p = 0.01$), the mediating effect accounted for 32.56% of the total effect. But the mediating effect was not significant in females ($p = 0.72$). Conclusion: In males, more physical activity could reduce the irrational procrastination of participants by dealing with stress. And better regulation of perceived stress might be an effective method for reducing irrational procrastination.

The effects of acute multi-modal exercise on cognitive functions in middle-old aged adults: a pilot study

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ABSTRACT

Aging has been negatively associated with cognitive functions, and it is known that age-related cognitive decline harms the activities of daily living and the quality of life. Exercise is recognized as an efficient approach for improving cognitive functions and preventing cognitive decline and brain decay in older adults. Recently, studies associated with exercise and cognition have also revealed that the beneficial effects of exercise on cognition can extend to acute exercise paradigms. Notable, those studies regarding the relation between acute exercise and cognitive functions have mostly focused on single modality exercise. The purpose of this pilot study was to explore the effects of acute multi-modal exercise on cognitive functions in older adults. Six

KEYWORDS

Acute Exercise; Cognition; Mindfulness; Multi-modal Exercise

middle-old aged adults (55-65 years old) were recruited. All participants have performed multi-modal exercise for 30 minutes, including 5 minutes warm-up, 20 minutes of main exercise (aerobic exercise, stretching exercise, and Bagua Zhang), and 5 minutes of cool-down. The Tower of London task (TOL), the Stroop test, and a Mindful Attention Awareness Scale (CMAAS) were administered before and after exercises. The results showed that regarding the Stroop performance, acute multi-modal exercise had a moderate positive effect across all conditions. Regarding the TOL, acute multi-modal exercise had a large positive effect on the Execution Time and Total Time, a moderate positive effect on the Correct Score, and a small positive effect on the Move Score and Initiation Time. Lastly, regarding the CMAAS, acute multi-modal exercise had a small effect on mindfulness. The present pilot study suggests that multi-modal exercise could improve disproportionately different aspects of cognitive functions and mindfulness in middle-old aged adults. Future research is suggested, in order to explore the relationships between acute multi-modal exercise and cognitive functions, with larger sample sizes, and targeting the specific mechanisms related to the underlying effects of acute multi-modal exercise on cognitive function.

A cross-cultural comparison of college students' physical activity in Korea and Malaysia using the transtheoretical model

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ABSTRACT

The present study aimed to compare the levels of physical activity among Korean and Malaysian university students and their associated psychosocial variables. Korean participants were from Seoul National University of Science and Technology, South Korea (n = 574, mean age = 21.71 years, SD = 2.7) and Malaysian participants were from Universiti Sains Malaysia, Malaysia (n = 562, mean age = 20.81 years, SD = 1.2). The standardized measures in Korean and Malaysian languages were used to access the stages of physical activity, pros, cons, self-efficacy, behavioral processes of changes, cognitive processes of changes, and the physical activity levels among Korean and Malaysian university students. Before analyzing the main purposes of the study, measurement invariance between the Korean and Malaysian TTM measures was identified. From these analyses the TTM measures used in this study were cross-culturally invariant for Korean and Malaysian participants ($\chi^2(76) = 31.51, p = .14, CFI = .99, \Delta RMSEA = .03$ for self-efficacy, $\chi^2(72) = 107.77, p = .00, CFI = .93, \Delta RMSEA = .05$ for decisional balance, and $\chi^2(98) = 326.77, p = .00, CFI = .93, \Delta RMSEA = .06$). Then, descriptive statistics were used to summarize the characteristics of the participants. Crosstab

KEYWORDS

transtheoretical model; cross-cultural; Korean; Malaysian; physical activity

analysis with chi-square (χ^2) was performed to examine gender and nationality distribution of physical activity. Independent t-test was used to classify significant mean differences in TTM constructs and physical activity by nationality. Multivariate analysis of variances (MANOVAs) were conducted to identify differences in TTM constructs and physical activity across the physical activity stage. Furthermore, a multivariate ordinal logistic regression analysis was carried to predict the stage of physical activity. The results showed that the levels of physical activity by nationality and gender were significantly different. In addition, all of the transtheoretical model (TTM) constructs were significantly different across the various stages of physical activity, excluding the cognitive processes of change. This study was the first cross-cultural study aiming at determining the levels of physical activity and the related influential psychosocial variables based on TTM among Korean and Malaysian university students. The current findings provide fundamental knowledge to develop generic physical activity intervention programs that meet the needs of a culturally diverse population.

Validation of psychometric properties of chinese version of the Weight Pressures in Sport -Female (WPS-F-C) measure

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ABSTRACT

Taiwanese female college students report strong body dissatisfaction which has been correlated with weight concerns and eating disordered behavior. This study explores and assesses body image concerns related to sport participation among Taiwanese college female athletes with the goal of preventing the development of eating disorders. Reel and colleagues (2010) developed and validated a measure assessing weight pressures in sports among female athletes (WPS-F) in English that has been translated into several languages such as Spanish, Portuguese, but currently there is no Chinese version available. Hence, the purpose of this study was to translate the WPS-F from English to Chinese and determine the reliability and validity of the Chinese version of the WPS-F. This study was conducted with two stages. In Stage 1, a six-step approach for translation and cross-cultural adaptation of self-report measures was followed to generate the Chinese version of WPS-F (WPS-F-C). In Stage 2, a cross-sectional, observational study design was used to determine the reliability and construct validity of WPS-F-C among Taiwanese college female athletes. Female athletes completed the survey questionnaires (i.e., WPS-F-C, demographics) through a HIPPA-compliance web-based research databases (i.e., REDCap). Exploratory structural equations (ESEM) and McDonald's Omega coefficient were used to examine the factor structure and internal consistency reliability of WPS-F-C, respectively. The study was

KEYWORDS

weight pressures; female athletes; psychometric properties; Chinese

approved by the Institutional Review Board of University of St. Augustine for Health Sciences. The sample consisted of 267 college female athletes aged between 18 and 23 years ($M = 20.3$, $SD = 1.1$). The average number of years in the current sport at their university is 2.3 years ($SD = 1.0$). The result of ESEM showed evidence to support a replication of original 4-factor structure with the Chinese version of WPS-F ($\chi^2(62) = 157.39$, $RMSEA = 0.076$, $CFI = 0.99$, $TLI = 0.98$). A McDonald's Omega coefficient of 0.89 indicated a good reliability. The WPS-F-C demonstrated good internal consistency reliability and construct validity. The WPS-F-C allows for researcher to further investigate weight-related pressures in sports for Chinese-speaking female athletes. Clinicians and coaches can use this reliable and validated measurement to identify weight-related pressures among athletes. This Chinese version of the screening tool will help to increase awareness, provide necessary education and prevent negative body image and health behaviors.

What kind of psychological construct is exercise habit?: from the perspective of habit strength

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ABSTRACT

It goes without saying that frequent exercising has a positive health impact. This frequency then may form the basis of an exercise habit. So, reinforcement of habit strength is more essential goal of health promotion than behavior modification in short term. But Habit has been an undervalued concept in the behavioral sciences because habit has been equated with behavioral frequency. One reason was a lack of psychological measurement of habit. Verplanken & Orbell (2003) developed a questionnaire called the Self-report Habit Index (SRHI) to measure habit as a psychological construct. Advantages of SRHI are simplicity of 11 items and availability for kinds of behavior. The other scale measuring psychological processes of habit is Exercise Habit Strength scale (EHSS) by Grove et al. (2014) and Takami (Japanese version, 2015). The four sub-scale of EHSS could measure psychological processes of exercise habit from various aspects (Automaticity, patterned action, etc.). The objective of present study was to investigate psychological process of exercise habit from the perspective of habit strength using these two scales together. 373 undergraduate students and adults answered the SRHI and The EHSS. The result of exploratory factor analysis showed that habit strength of exercise consisted of four factors following patterned action, negative consequences, automaticity, and cue driven. And the results of confirmatory Factor Analysis supported the four factor model. Automaticity of habit has two aspects. One is effortless at start-up. The other is effortless in the heat of exercise. The items of effortless at start-up were include in factor of patterned action. The scores of four factors were compared

KEYWORDS

habit; habit strength;
exercise; automaticity

with five categories based on stages of change. The result reveals a general increase in the strength of three factors except cue driven across the stage-of-change continuum. Patterned action and automaticity were strongly related to current and past involvement in exercise. These findings indicated that the habit strength of exercise habit is featured by forming personal pattern of exercise, and getting routines through activities. And automaticity made by patterned action reduce conscious effort to start and engage. None performance of habitual behavior make us feel wired. It is suggested that the negative feeling may be secondary factor after previous two factor. And unconscious motivation by environment is gradually increased according with habit formation. We should take into account these features to facilitate exercise habit formation.

Multi-modal exercise improves inhibitory control in late middle-age adults: a pilot study

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ABSTRACT

Aging is not only accompanied by the deterioration of physiological functions, but also several aspects of cognitive function. Previous studies have demonstrated that several interventions, including exercise, mindfulness, cognitive training, social interaction, nutrition and sleep. Notably, while regularly engaging in exercise has been associated with superior cognitive functions, the effects of the exercise involved multi-modals on cognitive functions, especially the higher-order of cognitive functions (e.g., executive function), has not been intensively studied. The current study therefore aimed to provide preliminary results of the influence of multi-modal exercise on multiple aspects of cognitive function in late middle-aged adults. Given the status of pilot study, pre-experimental design was utilized in the current study. Twenty-three late-middle-age participants ($M_{age} = 54.5$, $SD = 6.6$) were recruited and completed a 12-week multi-modal exercise program that included cardiopulmonary bouts, muscle endurance, flexibility, coordination, and mindfulness, for 1.5 hours per week. In addition, the Stroop test was employed in order to assess the inhibitory control aspect of the executive function, both before and after the exercise intervention. The results revealed that the response time of the Stroop test was significantly decreased following the 12-weeks of the multi-modal exercise ($p = .028$), while no significant difference in the accuracy between the pre- and post-interventions was observed ($p = .236$). These findings suggested that a 12-week multi-modal exercise program might contribute to the improved inhibitory aspect of executive function in late middle-aged adults, as reflected by the shorter RTs of the Stroop test task. However,

KEYWORDS

executive function; late middle-age; multi-modal exercise; Stroop test

given the nature of the pre-experimental design, future research utilizing a true experimental design and exploring other aspects of executive function (e.g., working memory and shifting) is warranted.

The effect of fitspiration images on the body satisfaction and regular exercise intention of adolescent girls

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ABSTRACT

Appearance is an issue that catches people's attention in today's society. Researchers found adolescent girls are less satisfied with their body images compared with boys. When adolescents are unsatisfied with their body images, they tend to hold negative values and show negative behaviours, like eating trouble, social anxiety, depression, etc. Therefore, adolescents' satisfaction with body images will impact their life and personality development. The factors that influence body images may include gender, stage of development, significant others, traits and emotions, social culture and media. Recent studies have shown that viewing Fitspiration images can promote the motivation to exercise, but meanwhile make people unsatisfied with their bodies. While most of the previous studies aimed at adult women, this study aimed at high school girls, exploring the impact of fitspiration images and other sociocultural factors on adolescent girls' satisfaction with their bodies and the intentions of regular exercise. In this study, 255 girls at the age of 16.41 ± 1.03 were recruited. They filled out the internet questionnaire through Surveycake. The measurements included sociocultural factors contain media, peers and parent, body satisfaction and exercise intention. They completed demographic variables, sociocultural factors, the pre-test for body satisfaction and exercise intention first. Then 12 Fitspiration images were shown to them, and in turn they reported the post-test of body satisfaction and the exercise intention. All data were analyzed with pair T-test, and hierarchical linear regressions. The results shows significant differences between pre and post-test. It indicates that watching fitness exercisers can radically improve the regular exercise motivation of adolescent girls, but it severely reduces their body satisfaction. This study find that sociocultural factors can predict the body satisfaction and regular exercise intention of the pre-and post-test respectively, however, only the peer factor affect body satisfaction and the parent factor affect the regular exercise intention significantly. After control BMI, the hierarchical linear regressions results find that sociocultural factors can predict the change of body satisfaction but regular exercise intention after watching fitness exercisers. However, only the parent factors significantly affect the body satisfaction. This study results indicate that high school girls' body satisfaction and the intention

KEYWORDS

Sociocultural factors; Body image; Inspiration; Instagram; SNS

of regular exercise are impacted by watching Fitspiration images on internet. Furthermore, social and cultural factors are effective predictors, which may help to analyze the impact of internet community media on the development of adolescent girls' body image and exercise intention.

Exercise behavior and subjective well-being in young adults during the Covid-19 pandemic

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ABSTRACT

The coronavirus disease (COVID-19) pandemic has rapidly spread through most countries around the globe. The disease could impact the respiratory system, the immune system, and frequently causes death. The implementing of social distancing, the avoiding of crowds, even the closing of exercise facilities at either campus or off-campus locations, were suggested by the government in order to prevent the virus from spreading. Those necessary governmental suggestions and restrictions could influence exercise behavior. Exercise frequency and duration might be positively associated with subjective well-being. The aim of this study was to explore whether COVID-19 conditions influenced exercise behavior, as well as the association between exercise behavior and subjective well-being, during the COVID-19 pandemic. 400 young adults were recruited. The participants were asked to fill out exercise frequency and duration, and subjective well-being questionnaires, which were collected at the end of April, 2020. The results from the Wilcoxon signed-rank test revealed that exercise frequency was significantly reduced during the COVID-19 pandemic, compared to exercise frequency ($p < 0.05$) before the COVID-19 period. Exercise duration was significantly shorter during the COVID-19 pandemic, compared to duration ($p < 0.05$) before the COVID-19 period. A Pearson correlation revealed that both exercise frequency and duration were not significantly associated with subjective well-being. This study suggested that the government policy may cause a reduction of exercise frequency and duration during the pandemic compared to prepandemic. The exercise frequency and duration might not then be associated with subjective well-being in young adults ($p > 0.05$). Further investigation is essential to examining exercise behavior during the pandemic for different populations, such as middle-aged adults, older adult, or clinical populations.

KEYWORDS

COVID-19; exercise behavior; subjective well-being

The flow experience of scuba diver

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ABSTRACT

Taiwan is an island around ocean and marine-resources is rich. The government pay much attention to coastal recreations and provides supportive environment. The number of people who can swim and participate in coastal recreation is increasing as policy is implemented. Therefore, the country's diving industry is booming. In this context, the positive experience of leisure participants is also an important factor. The study follows the flow experience model by Csikszentmihalyi (1975, 1990), aims to revise the flow experience scale suitable to scuba diving participants and explore their differences in diving experiences. The research tool adopted is the convenience sampling method. The participants were recruited from the scuba diving related online communities, they were fully informed of the purpose of the study. A total of 331 participants took part in the online tests. They completed demographic variables and the Chinese Version of flow experience scale. Among these, 296 participants' data were valid, with 149 males and 147 females aged 18–62 years, with 34.51 years as the mean age. All analyses were performed with IBM SPSS Statistics 20.0. Methods used to analyze data included exploratory factors analyses, reliability analyses, descriptive statistics, independent sample t-test, one-way ANOVA. There are 28 items on the scale after exploratory factors analyses utilizing to examine the theoretical model. Six-factor solutions are specified and 69.4% of the total variance was explained. The factors include challenge-skill balance, clear goals, immediate feedback, paradox of control, loss of self-consciousness, and autotelic experience. The Cronbach's α of six factors was .82[?].91. The results find that there are significant differences between levels of scuba diving seniority on participants' flow experience score. The scale of participants with a higher seniority level were more than those with lower seniority. The results also showed that there are significant differences between levels of scuba diving qualifications on participants' flow experience score. The scale of participants with higher qualifications were more than lower qualification. There was no significant difference in the total score of flow experience between males and females. Finally, we make a new Chinese version of flow experience scale for scuba diving participants and may serve as a reference for future researchers.

KEYWORDS

positive emotion; coastal recreation; scuba diving qualification; scuba diving seniority; diving experience

Sedentary leisure behavior and positive-negative emotion in adults

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ABSTRACT

Sedentary behavior has an impact on mental health, but the effect has not been consistent. The degree of mental activation may be an important factor. Consequently, the present study aims to investigate the interest on sedentary leisure behavior, the status of the positive and negative emotions, the difference of sedentary leisure behaviors and emotions associated with the participants' background variables, and the predictive power of sedentary leisure behavior on positive and negative emotions. The data was collected from adults in northern Taiwan (N=172, M age=38.5, including 54.1% women and 82.9% workers). The research tools included (1) the Interest of Sedentary Leisure Behavior Questionnaire (10-point Likert scale); (2) The Chinese version of Positive and Negative Affect Schedule (PANAS) (Deng & Zhang, 2006; Watson & Tellegen, 1988) (5-point Likert scale). Main results were as follows: (1) The mean of interest level in sedentary leisure behavior was 6.34. Among 8 sedentary leisure types, using a computer or mobile phone to surf the Internet has the highest rating of interest (M=8.11). The means of positive emotion was 3.26, and the negative emotion was 2.09; (2) Females were significantly more interested in creative sedentary leisure behaviors than men; adults under 40 were significantly more interested in sedentary leisure behaviors of using computers or mobile phones to surf the Internet. Single and childless adults had significantly higher negative emotion; (3) The interest of using computers or mobile phones to surf the Internet and engaging in sedentary hobby behaviors could positively predict positive emotion ($\beta = .232, .165$ respectively). Sedentary learning behavior could negatively predict negative emotion ($\beta = -.152$). Overall, the findings showed that using a computer or mobile phone to surf the Internet appeared to be the most interesting sedentary leisure behavior for adults in northern Taiwan. Such a sedentary leisure behavior as well as sedentary hobbies positively predicted positive emotion. In addition, the interest in sedentary learning behavior of leisure type was associated with the lower of negative emotion. Therefore, to increase positive emotion and to reduce negative emotion, the above mentioned three types of sedentary leisure behaviors were recommended as best options in this research.

KEYWORDS

Mental activation; The interest on sedentary leisure; Predictive power

Women's views and experiences of a perinatal exercise counselling intervention: a qualitative study

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ABSTRACT

Physical activity during the perinatal period is beneficial for the physical and psychological health of both the mother and the foetus. Perinatal women are encouraged to participate in at least 150min of moderate intensity aerobic physical activity

KEYWORDS

perinatal physical activity; intervention acceptability; qualitative research; physical activity engagement

throughout the week and gradually resume their post-birth activities as soon as it is medically safe. However, women during their pregnancy and postpartum limit or discontinue their exercise routine. The aim of this study was to explore perinatal women's views and experiences deriving from a Physical Activity Counselling intervention and evaluate the intervention's acceptability. A nested qualitative study, within a Randomised Controlled Trial of a Physical Activity Counselling intervention for women recruited via obstetric care practices, was conducted. Participants attended two face-to-face counselling sessions and six phone sessions from 27weeks gestation to 8weeks post-birth. The Physical Activity Counselling intervention was based on the Transtheoretical Model of change aiming to enhance participants' knowledge, skills, strategies, and confidence to engage in regular self-paced physical activity. The active control group received a Perinatal Wellbeing Education implemented equally to the Physical Activity Counselling group with respect to number and duration of counselling sessions. A qualitative study with semi-structured interviews was conducted with eight adult women of reproductive age during their 10th week post-birth. The analysis resulted in three overarching themes. Dominant forces, which highlighted that sociocultural factors and obstetrics' reinforcement contribute in the decision-making process for physical activity of perinatal women; reinforcement contingencies which demonstrated that the affective effect of physical activity and the ability to regulate the intensity pace attributed to the maintenance of physical activity; suggestions for improvements, which showed that participants would like the partner involvement and engaging to physical activity earlier during the pregnancy. This is the first qualitative study evaluating the effect of self-paced intensity of physical activity to a perinatal population. In addition, this is the first study to examine and record the potential benefits of PA counselling interventions targeting expectant couples. Promoting physical activity should be a priority in public health policy for women of reproductive age. Additional research is needed to understand how self-paced exercise is related to acute affective responses to exercise and future exercise behaviour among perinatal population.

Physical activity and depressive symptoms in brazilian adults: a network based on populational data

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ABSTRACT

Depression is a mood disorder that affects more than 300 million people worldwide and is prevalent in people of all age groups. The standard treatment for depression consists of medication prescription and psychotherapy, in which physical activity can act

KEYWORDS

Depression; Network analysis; Physical activity; National health survey

as a beneficial adjunct therapy, once it has shown effectiveness in reducing anxiety and depression, improving sleep, and cognitive function. This study aimed to analyze the relationship between symptoms of depression and physical activity in the adult Brazilian population. The research was based on secondary data, originating from the 2013 National Health Survey (PNS - 2013), from 49,025 individuals aged 18 to 59 years. A specific questionnaire developed for the research was used to identify the amount of minutes practicing weekly physical activity in the leisure-time, transportation, working-time, and household domains. Also, the Patient Health Questionnaire - 9 (PHQ-9) was used to assess depression symptoms. Data analysis was performed in R software (v. 4.0.5). To explore the relationships between depressive symptoms and physical activity domains, a partial correlation network was estimated, with LASSO regularization and EBIC as model selection method, with hyperparameter γ set to 0.25. The expected influence centrality was used to measure the influence of each node in the network, based on the magnitude of the edges. The overall network structure showed that depression symptoms were strongly connected to each other, while physical activity domains showed few associations with symptoms. The strongest relationship in the network was observed between depressed mood and feelings of worthlessness. Physical activity at home and at working-time showed positive associations with fatigue, while leisure-time physical activity showed negative associations with depressed mood. On the other hand, active transportation for job or other activities showed no connection with depression symptoms. Depressed mood and anhedonia had the greatest expected influence on the network when compared to the other nodes, indicating that these variables connected strongly and/or showed many connections with the other variables. We conclude that leisure-time physical activity was the only domain that showed a negative connection with a depressive symptom, indicating that practicing sports, physical exercises or walking, is important to mitigate and prevent the development of symptoms.

The effects of exercise modes on executive functions in children with attention-deficit/hyperactivity disorder: a preliminary study

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ABSTRACT

Attention-deficit/hyperactivity disorder (ADHD) is one of the most common developmental disorders, and has a high prevalence in childhood. A growing body of literature has suggested that children with ADHD have difficulties in exercising proper

KEYWORDS

ADHD; close-skill exercise; open-skill exercise; task-switching

executive functions. Evidences showed that the task switching performance was impaired in children with ADHD. Exercise has been recognized as a potential safe treatment for children with ADHD, and it can roughly be categorized into open-skill and closed-skill types of exercises. The open-skill and closed-skill exercises have disproportionate benefits related to executive functions. The purpose of this preliminary study was to examine the effects of different exercise modes on task switching in children with ADHD. 30 children, aged between 8 and 10 years old, were recruited. All participants were assigned into six group: healthy and open-skill exercise (HO), healthy and closed-skill exercise (HC), healthy and non-exercise (HN), ADHD and open-skill exercise (AO), ADHD and closed-skill exercise (AC), ADHD and non-exercise (AN). All participants were instructed to complete the task-switching test. The results revealed that for the HO group, shorter response times were observed in the homogenous (ES = -0.82) and the heterogeneous (ES = -0.43) conditions. For the HC group, shorter response times were observed in the homogenous (ES = -0.92) and the heterogeneous (ES = -0.91) conditions. For the AC group, the shorter response times were observed in the homogenous (ES = -0.56) and the heterogeneous (ES = -1.01) conditions. For the AO groups, shorter response times were observed in the homogenous (ES = 0.04) and the heterogeneous (ES = -1.24) conditions. The smaller global and local switch costs were found for the exercise groups, compared to the non-exercise groups, in both the healthy and the ADHD populations. These findings suggested that the individuals frequently participating in either open-skill or closed-skill exercises could improve their working memories, mental flexibility, and inhibition. Future study is encouraged in order to examine the underlying mechanisms at work between exercise modes and cognitive performance.

Effects of multi-component exercise programs on the cognitive function during a task-switching test

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ABSTRACT

While benefits of exercise training programs consisting of multiple physical fitness components (i.e., multi-component exercise) on physiological systems have been suggested, few studies have examined the effects of multi-component exercises on different aspects of cognitive functions (e.g., basic cognitive processing and executive function). Hence, the effects of two types of multi-component exercise programs on the basic cognitive processing and shifting aspect of executive functions were examined and compared in healthy young adults. A group of 44 healthy young adults was recruited and assigned into one of the two types of

KEYWORDS

Shifting; Physical fitness; Exercise training; Executive function

multi-component exercise programs (i.e., MCEP-A and MCEP-B), 100-minute training per session per week, for 12 weeks. Training methods focusing on muscular fitness and flexibility were employed in both groups, yet, additional aerobic and balance training was included in the MCEP-A. The behavioral indices of basic cognitive and the shifting performance (i.e., reaction times and accuracy) were assessed via the two conditions of the task-switching test (i.e., homogeneous and heterogeneous conditions), prior to and following the 12-week multi-component exercise programs. Finally, various components of physical fitness (e.g., aerobic and muscular fitness, as well as flexibility and balance) were assessed. The post-intervention scores of the task-switching test and physical fitness of the two exercise groups were compared using separate one-way analysis of covariance, with the pre-intervention scores as the covariates. Our results indicated that, after adjusting for the pre-intervention scores, individuals of the MCEP-A demonstrated significantly shorter reaction times during the homogeneous and heterogeneous conditions (Mean = 536.67 ± 11.38 ms and Mean = 733.12 ± 20.66 ms, respectively) of the task-switching test than their counterparts in the MCEP-B (M = 572.82 ± 11.38 ms and M = 808.63 ± 20.66 ms, respectively). Notably, no significant difference in accuracy between the two groups was observed. Finally, improved muscular fitness, flexibility, and balance were also observed in the MCEP-A after the 12-week exercise training. These results suggested that while the cognitive function was improved after the 12-week multi-component exercise programs, the exercise program involving more components of physical fitness might result in enormous improved performance across multiple cognitive functions (e.g., the basic cognitive processing and the executive functions), even during young adulthood.

Comparing acute effects of breaking up prolonged sitting on inhibitory control in healthy adults: a crossover randomized controlled trial

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National Taiwan Normal University

ABSTRACT

Introduction: Inhibitory control is one of the core executive functions, which is related to the ability to prevent disruption by competing stimuli in order to maintain goal-directed interactions with the environment. In recent years, there has been a significant amount of research showing that inhibitory control can predict mental health and quality of life in adulthood. One study indicated that a single bout of 3.5-hour sitting resulted in negative effects on cerebral blood flow, which might be associated with poor inhibitory control. Another study reported that breaking up prolonged sitting with 3-minute moderate-intensity walking every 30 minutes was beneficial to inhibitory

KEYWORDS

Inhibitory control; Physical activity; Sedentary behavior

control in females. Purpose: This study aimed to examine the acute effects of actively taking breaks from uninterrupted sitting on inhibitory control in adult males. Method: Fourteen males (25.6 ± 4 years) completed three visits; the first was for familiarization, and the following two were 3.5-hour conditions in a randomized order. Control condition: uninterrupted sitting for 3.5 hours. Experimental condition: sitting with 3-min brisk walking (6.4 km/hour) breaks every 30 minutes. All participants were instructed to fast from 9 p.m. the previous night, and caffeine and alcohol were forbidden 24 hours before each experiment. For each condition, participants visited the laboratory in the same time and ate identical breakfasts. Inhibitory control was assessed by Stroop test at baseline (before the meal) and after condition. Results: Data was analyzed using 2 (condition) X 2 (task condition) Analysis of variance (ANOVA). For each condition, the change in accuracy and reaction time were calculated (post-test – pre-test). There was no significant effect for condition in accuracy and reaction time ($F = 0.603$, $p = 0.451$; $F = 0.162$, $p = 0.694$). On average, reaction time was 5.02 ms shorter in the experimental condition compared to the control condition. Conclusion: Although the results did not show a significant difference between the two conditions, we observed that the experimental condition showed shorter reaction time than the control condition by comparing the means of the two conditions. This finding might provide preliminary evidence that breaking up prolonged sitting with 3-min of brisk walking may improve inhibitory control in adult male.

Peer influence on adolescents' motivation toward physical education through basic psychological needs

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ABSTRACT

Peers play a prominent role in adolescents' lives during school, both in terms of time spent together and potential to impact development. Peer influence on motivation can exert through competitive behaviors, collaborative behaviors, social relationship etc. A climate in which peers place more emphasis on cooperation, effort and personal improvement makes adolescents feel more competent and more involved in group decision. Such climate can support adolescents' basic psychological needs which in turn promoting motivation toward physical education. The current study aimed to investigate how peers influence adolescents' motivation toward physical education through basic psychological needs. 2319 secondary students with mean age of 12.53 years old participated in the study. They completed questionnaires related to peer motivational climate, sport friendship quality, peer support for exercise, basic psychological needs satisfaction and frustration at physical education context and motivation toward physical education. We conducted the

KEYWORDS

achievement goal theory; motivation; peer influence; physical education; self-determination theory

structural equation modeling to examine the peer influence on motivation. The model fit data well. The results showed that classmates support positively predicted basic psychological needs satisfaction at physical education class and both classmate support and friend support negatively predicted basic psychological needs frustration. Meanwhile, classmate conflict was found to be positive predictor of basic psychological needs frustration. In turn, basic psychological needs satisfaction positively predicted autonomous motivation while basic psychological needs frustration positively predicted controlled motivations and amotivation. Moreover, classmate support and friend support also positively predicted autonomous motivations. Classmate support also positively predicted performance approach motivation. On the other side, classmate conflict and friend conflict positively predicted controlled motivations and amotivation, and performance approach motivations. In addition, friend conflict also positively predicted performance avoidance motivations. These findings suggested that adolescents' motivation toward physical education could be influenced not only by close friends' support and conflict but also by classmates' general support and conflict.

Cardiorespiratory fitness, cognitive functions and neuroelectrical activity in older adults with different APOE genotypes: a preliminary study

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ABSTRACT

ApoE-4 allele (E4) has been associated with a higher probability of cognitive decline and signals the potential for aberrant levels of cognitive-related biomarkers. A growing number of studies have suggested that the decline of cognitive performance might be postponed or slowed by higher levels of cardiorespiratory fitness (CRF) among older adults. Therefore, the potential interactive effects between CRF and the genotypes of the E4 on the cognitive functions are of particular interest. The purpose of this preliminary research was to examine the influence of CRF and ApoE genotypes on cognitive functions among older adults. 25 older adults (60-70 yrs) were recruited. Based on their genotypes and CRF, participants were grouped into the following four groups: E4 carriers with high CRF (EH, n = 6), E4 carriers with low CRF (EL, n = 7), non-E4 carriers with high CRF (NH, n = 6) and non-E4 carriers with low CRF (NL, n = 6). The Stroop test was conducted in order to assess participants' basic cognitive and inhibitory performances, and their neuroelectrical activities were simultaneously recorded throughout the cognitive task. Finally, the N1 component of the event-related potential at Fz was analyzed. The preliminary results showed significant differences in CRF across groups (NH = EH > NL = EL). No significant differences

KEYWORDS

Cognition; Physical fitness; Elderly

in behavior data (accuracy and reaction times across three Stroop congruencies: neutral, congruent, and incongruent) were observed across groups. Finally, no significant differences in N1 at Fz was observed across groups. Surprisingly, these preliminary results did not demonstrate the influence of CRF levels on the participants' cognitive performances across either E4 or non-E4 carriers. However, it is important to note the limitation of the small sample size in this ongoing project, and a larger sample size will be required so as to further explore the interaction between CRF and ApoE genotypes on various aspects of cognitive functions.

The relationships between cardiovascular parameters and cognitive function in individuals with different cardiorespiratory fitness: a pilot study

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ABSTRACT

Introduction: Physical fitness is the ability to perform aspects of sports, working and daily activities. Individuals with better physical fitness would have more stamina to deal with daily life. Previous studies have shown that physical fitness is associated with cognitive function, which has been discussed in the literature that regular exercise could improve cognitive function. Therefore, researchers have further explored the mechanisms that explain the effects of exercise on cognitive function and found that the decrease in cognitive function was associated with the increase of cardiovascular risk. Thus, it has been suggested that the relationship between cognitive function and cardiovascular system be investigated via observing physiological parameters such as heart rate variability (HRV), vascular elasticity, blood pressure, and cardiac output. These physiological parameters may be sources of objective assessments of cognitive function. **Purposes:** This study aimed to examine the correlations between physiological parameters (physical fitness, heart rate variability, total peripheral resistance, cardiac output, etc.) and cognitive function. **Methods:** This is a cross-sectional study. The participants performed a one-time experiment to collect the data of cardiorespiratory fitness, cardiovascular function, heart rate variability and cognitive function for correlation analyses. Bruce protocol was used to assess participants' cardiorespiratory fitness. The impedance cardiography and electrocardiogram were used to evaluate the cardiac output and heart rate variability. Cognitive function tests included N-Back task (2-back test, 3-back test and dual-2-back test), trail making test and Wisconsin card sorting test. **Result:** The present pilot study analyzed and explored the correlations between physical fitness, physical activity, heart rate variability and cognitive function. The results of the Pearson Correlation analysis ($n = 14$) of the main outcome

KEYWORDS

cardiovascular parameters;
cognitive function;
cardiorespiratory fitness;
heart rate variability

variables showed a large negative correlation ($r = -0.857$, $p < 0.05$) between normalized high frequency heart rate variability (Hfnu) and cognitive test (3-Back test error rate %). Conclusion: The present pilot study found a significant correlation between heart rate variability and cognitive function, suggesting that there is a connection between cardiovascular parameters and cognitive function. In the next phase of the experiment, we will recruit more participants and analyze more cardiovascular parameters (vascular elasticity, blood pressure, body composition and cardiac output) with different cognitive function test.

The relationships between cognitive function and cardiorespiratory fitness

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ABSTRACT

Background: Cardiorespiratory fitness refers to the ability of the circulatory and respiratory systems to supply oxygen to skeletal muscles during sustained physical activity. Cardiorespiratory fitness is considered to be the most representative physical fitness index. Bruce treadmill maximum oxygen uptake protocol is one of the most classic and accurate exercise tests in the cardiorespiratory fitness test. The correlation between cardiorespiratory fitness and cognitive function can be found in many studies, which show that both chronic aerobic exercise and acute aerobic exercise have different effects on cognitive function. Previous studies have shown that regular exercise can improve cognitive function in patients with dementia and emotional instability. Some researchers suggest that clinical patients should be advised to perform long-term moderate-intensity aerobic and resistance exercise training. In other words, individuals who maintain high cardiorespiratory fitness for a long time may also be able to maintain better cognitive abilities. **Purposes:** This study aimed to examine the correlations between cognitive function and cardiorespiratory fitness. **Methods:** This is a cross-sectional study. The participants performed a one-time experiment to collect the data of cardiorespiratory fitness and cognitive function for correlation analyses. Bruce protocol was used to assess participants' cardiorespiratory fitness. Cognitive function tests included N-Back task (2-back test, 3-back test and dual-2-back test), trail making test (part A & part B) and Wisconsin card sorting test. **Result:** The present study analyzed and explored the correlations between cardiorespiratory fitness and cognitive function. The results of the Pearson Correlation analysis ($n = 35$) of the main outcome variables showed both cardiac output ($r = -0.408$, $p = 0.015$) and maximum oxygen uptake ($r = -0.469$, $p = 0.006$) have a moderately negative correlations with cognitive test (trail making test part A). No significant correlation was found between other cognitive tests and cardiorespiratory parameters. **Conclusion:** The present study found significant correlations

KEYWORDS

cognitive function;
cardiorespiratory fitness; trail
making test; cardiac output

between cardiorespiratory parameters and cognitive tests, suggesting that there is a connection between cardiorespiratory fitness and cognitive function. Individuals with better cardiorespiratory fitness appear to have better cognitive function performance by using less time to complete the trail making test part A, which represents the attention, visual scanning, and executive ability.

Effects of training using an exergame on cognitive function and heart rate variability in healthy middle-aged and older adults.

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ABSTRACT

Introduction: Recently, research has shown that regular exercise can improve cognitive function in middle-aged and older adults, and may also prevent or delay the occurrence of dementia. In addition, open-skill exercise (such as basketball) appears to be more effective than closed-skill exercise (such as jogging) in improving cognitive function. Exergame, a new mode of exercise, is similar to an open-skill exercise. Thus, playing exergame may improve cognitive function. However, there is still lack of relevant research. Previous studies have suggested that improvement in heart rate variability (HRV) may be one of the mechanisms by which exercise promote cognitive function, but few studies on exercise and cognitive function in the past include measurements of HRV. **Purpose:** The present study used exergame as an exercise training program to examine the effect of exergame training on cognitive function and HRV in healthy middle-aged and older adults. This study also further explored the correlation between HRV and cognitive function. **Method:** This was a randomized control study. Forty-three participants were recruited and randomly assigned to exergame training group or control group. The exergame group was trained for 10 weeks, 3 times a week, 50 minutes per session. The control group was asked to maintain their usual level of physical activity. Heart rate variability and cognitive function tests (Tower of London, digit memory span) were assessed at baseline and 10 weeks later. **Result:** After 10 weeks of exergame training, the score of digit memory span forward ($p=0.022$) and total score of digit memory span ($p=0.006$) were significantly improved in the exergame group, while no change was found in the control group. In addition, the changes in the three values of digit memory span were significantly different between the exergame and the control group. No changes were found within and between groups in the Tower of London test and HRV. No significant correlation was observed between the cognitive function and HRV. **Conclusion:** The results suggested that a 10-week exergame training program can effectively improve cognitive function of attention, alertness,

KEYWORDS

Exergame; Tower of London test; Open-skill exercise; Cognitive function; Heart rate variability

auditory memory, and short-term working memory in healthy middle-aged and older adults. There was no significant finding in the Tower of London test, suggesting that the exergame training effects may be selective in improving different cognitive function. The effect of exergame training on HRV was not observed in this study, and there was no significant correlation between HRV and cognitive function.

A health-related risk messages to change perceptions of objective health risks for physical inactivity among middle-aged females

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ABSTRACT

The current study was to investigate the effects of a health risk messages on changes in perceptions of objective health risks for physical inactivity. Forty-one women participated in the Physical inactivity-related health risk message intervention across the 16-week intervention. During this period, the study participants' objective risk factors (BMI, waist circumference, C-reactive protein, glucose, and insulin) and risk perceptions were measured at the three time points. Prior to the program, all 45 participants (Mage = 48.02 ± 5.77) took part in the first measurement; 97.8% ($n = 44$, Mage = 50.23 ± 6.10) participated in the second measurement performed eight weeks later; and 91.1% ($n = 41$, Mage = 50.15 ± 6.51) successfully completed the 16-week intervention and participated in the final measurement. A series of 2 (risk group vs. nonrisk group) \times 2 (pre-intervention vs. post-intervention) repeated measures ANOVAs were carried out to investigate the effects of the intervention on the physical inactivity-related health risks and the moderating effects of the objective risk factors. Separate ANOVAs were conducted using each relevant objective risk factor as an independent variable for each perceived health risk with age included as a covariate. In addition, separate hierarchical regression analyses were performed to test whether the changes in the perceived risk of heart disease, obesity, and diabetes could predict changes in physical activity throughout the health risk message intervention. In each regression model, perceived risk at the pre-intervention strategy was inputted in the first step, while the perceived risk at the post-intervention strategy was inputted in the second step. Results indicated that the intervention had a significant effect on improving perceived health risk of heart disease and obesity. Moreover, changes in objective health risk factors showed significant effect on changes in physical activity over the 16-week intervention. The study provided both theoretical and practical implications for perceived objective health risk factors as a predictor of physical activity. In specific, these findings suggest that in the fields of health promotion and preventive medicine, it is necessary to actively

KEYWORDS

Objective health risk factors; risk perception; physical inactivity; sedentary women

promote the benefits of physical activity, as well as the health risks attributable to lack of physical activity, to reduce the risk of diseases associated with physical inactivity, such as heart disease, obesity, and diabetes.

Integrating effects of practice, exercise, and sports experience on perceptual-motor performance when intercepting moving (Vehicular) gaps

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ABSTRACT

Introduction: The Learning process and performance in everyday tasks are associated with experience which leads to changes in behavior. For several decades, research on perception-action behavior in response to stationary/moving objects remained an interesting topic for motor behavior researchers. Intercepting a moving gap (e.g., road crossing) is an everyday task that necessitates both perception (judging whether the upcoming vehicular gap affords crossing or not) and action (moving to intercept/cross the gap). **Purpose:** This review study aimed at summarizing the effects of task-specific practice, exercise, or sports experience on perception-action when intercepting a gap between moving vehicles. **Methods:** The relevant studies were systematically searched using databases such as PubMed, ScienceDirect, Google Scholar. The details of relevant studies and findings were synthesized. The questions of how task-specific practice and sports experience influence perceptual-motor performance during gap interception (road crossing) have sought to be answered. **Results and Findings:** We found 19 experimental studies relevant to the topic (simulator training/practice = 14, exercise = 2, sports experience = 3). The results of those studies showed that task-specific practice/training, exercise, or sports experience significantly improved the participants' capabilities in terms of perceiving/moving during vehicular gap interception. Findings revealed that simulator training, exercise, and sports experience (see references) benefit road users' ability to distinguish between crossable/not crossable gaps and to synchronize movement according to the perceptual information (i.e., gap characteristics) during crossing action. **Conclusion:** This review study concludes that task-specific practice using simulators is beneficial for perceptual-motor performance during road-crossing, and exercise or sports experience cause to improve individual's perception-action capabilities not only for sports performance but also when performing everyday activities.

KEYWORDS

simulator training; exercise; sports experience; perceptual-motor performance; road-crossing

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Coordination and variability of backward longswing on rings of gymnasts with different skilled level

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ABSTRACT

The straight arms backward longswing on rings is a common skill for the rings event in men's competition gymnastics. It has been found that elite gymnasts had very consistent joint angle during the important phase of swing while they were more variable in certain stage, for adjust the velocity of body angle, compared to less skilled gymnastics (Hiley et al., 2013). For example, to keep the body stationary at handstand position, elbow angle must keep extent at still but correction for producing force. The knowledge about how the coordination of whole body movement and how the variability of kinematics of elite gymnasts differed from the less skilled gymnasts are the important information for coaching and pedagogy. Purpose: This study aimed to compare the coordination and variability of whole body movement of backward longswing on rings of different skilled level performers. Method: A skilled gymnast (more than 10 years experience and won the prizes at international competitions) and an unskilled gymnast (less than 2 years experience) participated. They perform the backward longswing on rings for 10 trials. The reflective markers were attached on the major joints of whole body and on the rings. Four high-speed cameras (240HZ) were used for collecting the 3 dimensional coordinates of markers. The joint angles and their velocities and the principal component analyses (PCAs) was conducted to measure the coordination of whole body movement. The t test was implemented to compare the difference of variables between two participants. Results: For the movement kinematics, the skilled had smaller deviation of joint angles at the end stage than that of unskilled. The results of PCA showed about 5 components could explain 90 percentage of movement variance with in which the skilled had larger percentage explained by the first and the second component. Moreover, the content of PCs were different between the participants. The continuous relative phase of angle of shoulder and hips also had different pattern.

KEYWORDS

Backward Longswing on Rings; Movement Control; PCA

Difference of coordination among fastball, curveball and change-up and between competition levels in college baseball pitchers

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ABSTRACT

It has been proved that the kinetics and kinematics among pitches of various speed and trajectories, (namely, fastball, curveball and change-up), were different for pitchers of both high and less competition levels. To cite an instance, there were higher glenohumeral internal rotation moment on the shoulder when throwing a fastball than curveball. However, whether and how the coordination changed as the biomechanics parameters and outcome differed has not been investigated. The present study aimed to examine the coordination of different types of baseball pitches of skilled and less skilled college pitchers. Methods: Three dimension coordinates of major segments of whole body of twenty healthy college baseball pitchers (ten skilled, ten unskilled, their average age is 20.75 ± 0.97), throwing fastball ($n = 20$), curveball ($n = 20$) and change-up ($n = 20$) for sixty trials were collected by using eight high speeded cameras (300HZ) and motion capture system. Kinematic data for upper extremities, lower extremities and pelvis were collected for fastball, curveball and change-up pitch types. After warm up, the subjects changed into tight-fitting spandex shorts and 33 refractive markers were attached on the joints then the participation stepped on the pitcher mound and started to throw to a catcher 18.44 meters away. The experiment is analyzed by paired sample t test, significance level was set as $p < .05$. Results: Comparison on kinematics showed that the elbow and wrist angle at the instant of ball release varied between pitch types, while the instant of foot contact and the position of ball release varied between skilled and unskilled pitchers. The coordination patterns were classified into three components and the difference of pitching types were found in the contents of components. Consisted with previous studies, kinematic differences existed among pitch types and skilled level. In addition, the coordination patterns abstracted by PCA emerged the differences of coordination pattern among types of baseball pitches, which meaning that coordination changed in types of pitching and PCA could be used as the method to differentiate the coordination pattern of baseball pitching types. The examination of combining both biomechanics and movement coordination provided a more comprehensive perspective on the mechanism of baseball pitching.

KEYWORDS

types of baseball pitching; coordination; principal component analysis

Movement-related cortical potentials associated with speed and accuracy during one-digit finger force production.

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ABSTRACT

Introduction: The hand is arguably the most versatile human effector (Schieber, 1991). Most tasks that people perform with their hands require differentiated movement of the fingers. Multi-finger force production has been recently studied as an example of motor redundancy (Bernstein, 1967). Movement-related potentials are interpreted to reflect a depolarization of cortical cells, indicating an increase in the readiness of cells to fire. Both influential parametric factors, speed and accuracy, were related with human motor control. This study will examine the role of deliberate control in terms of speed accuracy trade-off. We studied to explore the movement-related cortical potentials, MRCP associated with decremental and continuous force output by index fingers. **Methods:** 12 collegiate participants produced certain level of force and varied rate of force either by left or right index finger. Subjects signed an informed consent form approved by the Institutional Review Board of Chung-Yuan Christian University prior to experimental sessions. The implied parameters related with speed and accuracy activated the MRCPs by effector were examined. Statistical significant level will be set at $\alpha = .05$. Scheffe post hoc tests will be adopted if the group difference reaches to the significant level. **Results:** The force preparatory phase to distinguish the response of EEG relation between initiation of motor strategy and initiation of force was used. It was found that the component of movement-monitoring potential (MMP) was significant higher than readiness potential (RP) as well as motor potential (MP), ($F_{1,11} = 8.145$, $P < 0.01$). The MMP of the higher rate of force revealed more pronounced amplitude regardless of handedness. The amplitude of the MMP of index finger was higher performing speed tasks than that of accuracy, ($F_{1,11} = 5.849$, $P < 0.01$). In terms of electrodes associated with temporal issues, the initiation of Cz was earlier than other electrodes, especially during the speed tasks than that of accuracy, ($F_{1,11} = 6.98$, $P < 0.05$). **Conclusion:** This finding will contribute to the larger scope of behavioral neuroscience literature regarding the issue of how the CNS is organized in order to sufficiently control the multiple motor outputs from the arm-hand complex. It is suggested that the underlying mechanism of finger coordination or the complex motor system could be recognized neurophysiologically and cognitively.

KEYWORDS

Movement-Related Cortical Potentials (MRCPs); Speed; Accuracy; Finger; Rate of Force Development

Investigating the model of grasps in judo competition on elite college athletes of Taiwan

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National Taitung University

ABSTRACT

Recent studies has been shown that information about the technical-tactical interactions arising from the judo combat can

KEYWORDS

Technical-Tactical; Handgrip; Judo

provide coaches develop more specific training for competitive results. In a Judo competition, the approach and grip are crucial for determining the fighter's next action (Brito, Gomes Moreira, et al., 2017). By applying the technique and position, the fighters pulling, pushing and induce imbalance on their opponent that obtain higher control in the context of competition. It has been found that the time spent on approach and handgrip and the relation between these two activities varied as a function of different weight categories in world circuit high performance men judo athletes (Brabec, et al., 2019). How the patterns of approach and handgrip organized in high performance judo athletes in Taiwan? Is there certain pattern advantage in competition? Purpose: The study aimed to investigate the pattern of approach and handgrip of judo athletes in competitions of 2021 national player selection. Method: We examined judo competition process contests which include approach and handgrip and combats, with time-motion analysis. The games we analyzed in this study were public available video gained from U-tube database provided by the Association of Judo of Republic of China. The variables were adopted and modified from previous study (Coure, et al., 2014). The free computer version of ANDYIGG Program 2.12 was used to fragment and record. The exploratory descriptive analysis and logistic regression were conducted. Two judo experts observed the video and recorded data. The Cohen's Kappa values of intra and inter observers were 0.82 and 0.9 respectively. Results: 1.the exploratory descriptive analysis results showed: the handgrip to attack (ai-yotsu (both opponents using the same way grip (right or left) at the same time); kenka-yotsu (both opponents using the different way grip (right to left) at the same time) was perform same- side attacks was the most effective.2. grip-throw was use kenka-yotsu perform same- side attacks was more than ai-yotsu effective.3. The style of the approach was light-weight was more than heavy-weight variety. This information would be promote for coaches to plan the tactics and design training close to the real competition.

Speed and accuracy trade-off in discrete timing tasks

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ABSTRACT

Fitts' Law captures for limb movements an information processing account of the relation between movement speed and accuracy. This law has been shown to hold under many task constraints (e.g., spatial or temporal constraints), numerous environmental conditions (e.g., underwater) and across a range of population groups (e.g., young, old, special education needs). It predicts that the time required to move as fast and as accurate as possible to a target area is a function of the ratio between movement amplitude to the target and the target width. However, human movement takes place in both space and time and measures of

KEYWORDS

Fitts' Law; movement time; space-time constraints

movement accuracy in space are always made with respect to time, and vice-versa. The Fitts' aiming protocol can be interpreted as filling space with time and the reciprocal paradigm as filling time with space. In other words, the standard Fitts' model has spatial accuracy mediated by time while the reciprocal model has the performer mediating MT with space. Here we examined the effects of time goal and target time-bandwidth ($\pm 10\%$) on the movement amplitude. For comparison, the standard Fitts' Law discrete movement protocol also was run within the same space-time boundary conditions as the new reciprocal time-constrained experiment. Twelve participants performed 50 trials of discrete aiming movement for each of the 4 movement amplitudes (50, 100, 200 and 300 mm) with fixed target width (10 mm x 10 mm) and 4 corresponding average movement time goals (255, 296, 367, and 424 ms) without a spatial target. Repeated measures ANOVAs were used to examine dependent variables. Both movement time and movement amplitude increased with the associated kinematics manipulations. The results reveal a robust relation on the movement speed-accuracy phenomenon within a test of the generality of Fitts' law under the space-time framework.

Changes in motor evoked potential while observing opponent's tool use during the action anticipation task by expert kendo athletes

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ABSTRACT

During the sports activities requiring the response to an opponent's tool use, sensory information from the tool movement itself (in addition to the body movements of the opponent) provide critical cues for proper responses. Although the mirror neuron mechanisms have been traditionally adopted to explain the successful action anticipation in such sport settings, the focus of attention was limited to mirror property of physical body parts. Therefore, in this study, we have investigated if this exceptional ability of expert athletes to anticipate opponents' movements can be extended to the tools manipulated during the activity. Twenty four Kendo athletes were recruited for this study, and the behavioral test of anticipating the impact location of the sword was introduced while delivering the single pulse transcranial magnetic stimulation (TMS) on the primary motor cortex known to reflect the mirror property of the response. Video clips of an opponent's attacking movements were divided into 3 phases (first attack reaction phase, phase when the sword reached the highest position, and the final impact phase). Thus there were 3 temporal occlusion conditions (Reaction, Top, and Impact). Subjects were also divided into 3 groups based on the type of visual information provided (Spatial occlusion: Body only, Tool only, and Body+Tool groups). Two-Way repeated ANOVA was

KEYWORDS

Action anticipation; Tool-use; Transcranial magnetic stimulation; Motor evoked potentials; Kendo

performed (3 groups X 3 conditions) for statistical analyses. The results showed that the motor evoked potential (MEP) during the Reaction and Top phases were significantly greater than during the Impact phase in the Tool+Body group while there was no significant differences in the Body only group. On the other hand, in case of the Top condition, MEP responses in the Tool only and Tool+Body were showed no significant difference. These results suggests that, during the initial phase of the attack, the body schema of the opponent was extended (and include) the tool movements in addition to the actual moving body parts. Also, these anticipatory responses seems to be prepared as a result of visual processing (possibly to react toward any deceptive movements generated by the opponents), not by the familiar movement knowledge from previous experience. In conclusion, experts perceiving opponent's tool use action seems to be mirroring the tool as well as the body actions, and mostly contributed from concurrent visual information instead of the knowledge of skill.

Phase pattern in kendo from bargaining to strike

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ABSTRACT

One-on-one interpersonal sports comprise complex movements. Previous studies on interpersonal competitions such as martial arts (Kijima et al., 2012; Okumura et al., 2012) have focused on the relative phase between two players and characterized some of this complex movements as synchronization. However, these studies were conducted during the bargaining stage, which is a safe state where no one attacks, omitting the most important moment, the conclusion of the match. Furthermore, relative synchronization was defined by comparing the mean and standard deviation of all trials, which are representative values that do not accurately reflect the original movements of the two players. Therefore, this study analyzes each trial, from bargaining to strike, in kendo, and defines absolute synchronization by setting a threshold value to quantitatively clarify the phase patterns. Five experts with 12-or-more-years competition experience were selected for the trial, in which their movements were restricted to a back-and-forth direction only and their strike position to the "head" only. The one test was initiated by the start signal and stopped when one player striked, and 80 trials were conducted. The 5 seconds prior to including the strike were analyzed: the period was divided into 1-second segments; then, the last second, including the strike, was divided into 0.5-seconds segments, because of the intense movement. To extract in- and anti-phase synchronized, and asynchronized movements equally from the relative phase, it was divided every $3 / \pi$ and a threshold value set. In the last 0.5 second, including the strike, both players moved in the same direction (i.e., in-phase

KEYWORDS

Relative Phase; Interpersonal Synchronization; Martial Arts

synchronization) in 54 of the trials, while moving in opposite directions (i.e., anti-phase synchronization) during 2-1 seconds in 32 of those 54 trials. Following a chi-square (χ^2) test, it was shown that in- and anti-phase synchronization were statistically significant. An analysis of the relative phases in each trial, from the bargaining stage to the strike, revealed a specific striking pattern in kendo: once an anti-phase synchronization occurs in which the two players move to attract or separate from each other, and then an in-phase synchronization occurs in which the striker moves to chase the opponent.

How increasing the uncertainty in practice can foster exploratory learning

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ABSTRACT

The purpose of this study was to investigate the effect of providing different amount of information (i.e., increasing or decreasing the amount of uncertainty) as a way to foster exploratory activity of students in learning climbing during Physical Education lessons. Climbers (N = 20) were assigned to an “experienced” group or a “novice” group based on their initial performance. They practiced 3 times not identical but similar routes, each time with a different number of visible holds. This was possible as the practice was performed on an electronic climbing wall where the holds can be light on/off from a computer (www.climbling.com). During the first trial, only the next hold was visible (the hold lights on as far as the climber actually climbs up), the second trial showed only the 3 next holds, the third trial showed only the next 5 holds. Both the performance (i.e., time of the ascent), efficiency (i.e., geometric index of entropy) and exploratory activity (hold touches) were measured during each ascent. The experienced group showed better performance and fluidity based on time of ascent and traditional index of fluidity. The geometric index of entropy was 0.76 for experienced students and 1.52 for novices. In the same vein, the level of exploration was very low for both groups without any significant difference between the groups. However, a significant drop appeared in the indicators only for the expert group between the 1 visible hold condition and the 3 visible holds condition, namely the fluidity improved with 3 visible holds compared to 1 visible hold condition, when the level of exploration decreased when the number of visible holds increased. Eventually, decreasing the certainty of what will come next increased the exploratory activity of those expert climbers and appears to be an interesting way to foster exploratory learning in climbing. The present study advocates about a very limited information gathering from the novice students in terms of the consideration of the following holds. However the experienced students showed a drop in fluency advocating that experienced climbers can ensure the fluidity of their climb by

KEYWORDS

motor learning; functional variability; uncertainty; climbing; fluency

anticipating on the next 3 holds, and if those next 3 holds are not available it impacts the performance and fluidity of the climbers. In addition, removing this information for those students increased their motor exploration during practice, suggesting that more than infusion of variability, the infusion of uncertainty in practice can foster exploratory learning.

The effect of visual illusion on children's throwing performance

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ABSTRACT

Empirical studies have demonstrated that visual illusions can enhance one's self-efficacy, and in turns, affect individual motor performance. The overhand throwing has been considered as one of the fundamental motor skill in childhood. Therefore, this study was to explore the effects of Ebbinghaus visual illusion on children's perception regarding the size of the target, self-efficacy, and throwing performance. Thirty-six male students of elementary school age served as participants (mean age: 11.3 ± 0.3 years old). All participants and their parents / guardians were requested to sign on an informed consent form prior to participation. Using the within-participant design, each participant was completed 10 times of overhand throwing for each round targets visual stimulus by randomly order (a. control condition, b. surrounding larger circles' condition, and c. surrounding smaller circles' condition). Participants stand 4 meters in front of the target board to complete 30 throwing trials with their non-dominant hand during all process. Dependent variables were perceived size of the target, self-efficacy and radial error. Data were analyzed by one-way repeated measures ANOVA. LSD post hoc procedures were used for follow-up testing. The alpha level for significance was set at .05. Findings were as follows: the perceived size of the target circle surrounding smaller circles' condition (2.86 ± 0.77 cm) was significantly larger than the control condition (2.73 ± 0.66 cm) and the target circle surrounding the larger circles' condition (2.63 ± 0.71 cm); the perceived size of the control condition (2.73 ± 0.66 cm) was significantly larger than that of the target circle surrounding larger circles' condition (2.63 ± 0.71 cm). The self-efficacy scores of the control condition (42.22 ± 21.58 points) and the target circle surrounding smaller circles' condition (42.16 ± 20.45 points) were significantly larger than that of the target circle surrounding the larger circles' condition (37.56 ± 18.65 points). Nonetheless, there was no significant difference in the radial score of throwing accuracy across the three conditions. Therefore, this study was concluded that Ebbinghaus visual illusion affects children's perception regarding the size of the target and enhance self-efficacy, but it does not affect the accuracy of throwing performance.

KEYWORDS

Ebbinghaus illusion; self-efficacy; accuracy; overhand throwing

Preferred parameterization of discrete movements

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ABSTRACT

Developmental process and movement experience are the main factors that influence the intrinsic dynamics of human movement. Discrete aiming movements occur in our daily life and have been extensively studied over the last century. Speed and accuracy trade-offs describe the relation between the discrete rapid aiming movements and their variable performance at spatial targets whereas discrete movement with longer movement times often result in variable movement time performances. The purpose of the study was to investigate whether there exists preferred spatial-temporal performance that reflects the intrinsic dynamics of the discrete movements. Twenty healthy young adults participated in the experiment for 3 consecutive days where 50 trials of preferred discrete movement were tested for each day. Additional perturbation conditions were conducted after the initial test of the 50 preferred trials on the second day. The one-way ANOVAs were performed on the individual performance of movement time, movement amplitude, and average velocity to examine the similarity and differences among the different preferred sessions as well as between the perturbation and preferred conditions. The ANOVAs result showed that only 2 participants had similar preferred performance over 3 days ($p_s > .2$) but the pairwise comparisons showed that all participants had at least one pair of similar performances among the 3 sessions ($p_s > .2$). For the perturbation effect on the preferred conditions of the second day, 17 participants showed significant differences ($p_s < .05$) but only 4 participants showed significant difference between all pairs of comparisons for both amplitude and movement time performances ($p_s < .05$). When the accuracy of the spatial target was required, the movement times were significantly longer than the corresponding preferred condition; when the target movement time was required, it was the movement amplitude that was adapted from the preferred movement. The results of the current study provide evidence of weak preferred parameterization for the discrete movement that was subject to a temporary influence of the movement requirement. Future study will examine the practice effect on the stability of the preferred parameterization of the discrete movement.

KEYWORDS

motor control; intrinsic dynamics; speed and accuracy trade-off

Application of psychopy to the measurement of temporal accuracy in sports: tracking response time for different baseball pitches

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ABSTRACT

Baseball and softball batters need to control their swings with temporal and spatial accuracy (Kidokoro et al., 2019) to hit varied pitches. A precise assessment of this ability requires behavioral measurement and control of conditions and is best done using technology rather than manually. Therefore, in this study, we created a computer-based stimulus-response task using PsychoPy, an open-source programming software for psychology experiments written in Python, and evaluated subjects' performance on the task. We measured Response Time (RT) and examined whether skilled baseball or softball players exhibited accurate timing control even when stimuli with different durations were presented randomly. Twenty subjects participated: 10 expert baseball or softball players (ex-group) and 10 non-expert players (non ex-group). A stimulus-response task was created using PsychoPy3 (ver. 3.1.5). In this task, the length of the stimulus presentation time (stimulus duration) was varied to present balls with different speeds: the stimulus duration for the fast ball (FB) was 1.0s and for the change-up (CU) it was 1.5s. Each subject had four stimulus presentations of the same triangle in one trial, and was asked to press the space key on the keyboard exactly when each stimulus ended. The difference between the time at the offset of each stimulus and the time of the key press was calculated as the Response Time (RT). Each participant performed five trials of this task. One of these five trials used the same stimulus duration of 1.0s. In the remaining four trials, one of the four stimulus durations was 1.5s. The calculated RTs were classified into three conditions: 1 FB, 2 CU, and 3 FB after CU. The RTs of the ex-group didn't differ significantly as a result of the one-way-anova, so there was no difference in RTs for all conditions (1: $0.236 \pm 0.026s$, 2: $0.231 \pm 0.034s$, 3: $0.240 \pm 0.031s$, $p = 0.53$). The results of one-way-anova showed a significant difference in RT for non ex-group (1: $0.249 \pm 0.032s$, 2: $0.248 \pm 0.027s$, 3: $0.268 \pm 0.044s$, $p < 0.05$). The results of the subtests showed significant differences between 1 and 2 conditions and between 2 and 3 conditions ($p < 0.05$). These results suggest that non ex-group had difficulty responding to different temporal stimuli, which increased their RTs. It was found that expert baseball or softball players can respond to varied stimuli durations with quick precision.

KEYWORDS

stimulus-response;
PsychoPy; Python; temporal
response

Half Is enough: direction-switching coordinating actions of a triadic jumping task in a three-dimensional virtual space

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ABSTRACT

The coordination of actions with other people is crucial for social activities; any activity that involves multiple people working together to achieve a joint goal requires each person to adjust his or her behavior to match that of the others. Doing so in

KEYWORDS

Shared Virtual Environments;
Coordination Tasks; Triadic
Jumping

virtual environments will become an essential ability for us, especially in the post-COVID-19 era. When two or more people come together and share a virtual environment, the issue may arise of how those people can achieve a joint goal. Numerous studies have examined coordinating actions and agent dynamics in the real world, but it is unclear whether those results generalize to virtual environments; if we can apply research findings from the real world to the virtual world, we can enrich our social lives in virtuality. In this study, we investigated the characteristics of a triadic jumping task in a three-dimensional virtual space. One of the powerful features of virtual avatars is personalizing them to express individuality, and we therefore decided to compare two avatar model conditions; by reducing the body parts of the virtual avatar, we sought to determine the elements essential for coordination. We designed and developed a shared virtual environment in which to test triadic jumping tasks. In the environment, a virtual avatar jumps as its actual player would jump in the physical world, and three avatars can thus act in coordination. We examined the effect of two models of a virtual actor—full-body and lower-body—by focusing on the actions of switching the jumping direction from counterclockwise to clockwise and vice versa. The experimental results revealed no significant difference in the median reaction time of the jumping-direction switching actions between the full-body and lower-body models. Furthermore, we found that players could perform the same coordination task with the lower-body model as with the full-body model from the viewpoint of the triadic jumping task. Therefore, even if only the avatar's lower body is displayed, it is sufficient to realize the triadic jumping task.

Examining response characteristics in sports through simon effect -using psychopy, a programming software for psychology experiments

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ABSTRACT

Many sports-related situations are impacted by the Simon effect (Simon: 1990). For example, in baseball, a batter's timing of swinging the bat is delayed by the course of the ball thrown by the pitcher. This phenomenon can be explained using Simon effect because interference between predicted and actual stimulus positions are considered the cause. The batter predicts the type and course of the next pitch based on the pitcher's pitch, and the Simon effect may impact the next stimulus response. Therefore, even if the stimulus is as predicted, the batter may not provide the expected response. To clarify this phenomenon, we propose performing a stimulus-response task (ST) including the Simon effect, using PsychoPy, a programming software using the Python language for psychology experiments.

KEYWORDS

Simon effect; PsychoPy; Response Time

We examined whether response time (RT) of the ST would differ based on the impact of the Simon effect. We recruited 15 students as study participants. ST was created using the PsychoPy3 (ver. 3.1.5) software. Participants were requested to press the designated response key as quickly and accurately as possible when a circle was displayed on the screen. RT was calculated as the time between stimulus presentation and key press. ST comprised pressing the "X" key with the left index finger when stimulus presentation (red-circle) appeared to the left of the gazing point, and pressing the "/"(slash)" key with the right index finger when the stimulus presentation (green-circle) appeared to the right of the gazing point. The random task was a mixture of the Simon effect and ST. Simon effect is a trial wherein stimulus presentation position is reversed. The task was performed 20 times for each trial. The experimental procedure began with ST, followed by the random task and ST. RT of the first ST was 310 ± 88 ms, and RT of the final ST was 323 ± 80 ms. Significant difference ($p > 0.05$) was noted between independent t-test results of these two tasks. Moreover, significant difference ($p > 0.05$) was noted between independent t-test results of RT of the first ST and RT of the ST in the random task (412 ± 109 ms). Results showed that the Simon effect resulted in differences in RTs of STs before and after random task. Furthermore, ST within the random task was more affected by Simon effect.

The relation between executive and motor functions in preschool children

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ABSTRACT

The similar developmental trajectories of executive and motor functions suggest that the two domains are intertwined. However, research to date has revealed rather inconsistent results. Considering previous work, a key component influencing the relationship between the two domains seems to be the individual developmental stage. The aim of the present study was to assess specific associations between executive and motor functions in preschool children and to investigate whether existing associations differ between preschool age and young adulthood. It was hypothesized that executive control processes in preschool children play a pivotal role in the successful performance of motor tasks since most motor demands are challenging and novel for preschool children and thus require cognitive control. Forty-one preschool children (5-6 years) and 40 young adults (18-31 years) participated in the study. Motor and cognitive performance was assessed using a comprehensive battery of cognitive and motor function tests. Motor functions tested included speed and dexterity, strength, manual dexterity, and postural control. Cognitive tests assessed working memory capacity, simple processing speed, inhibition (self-regulation and

KEYWORDS

child development; executive functions; motor development; working memory capacity; early support

selective attention), and cognitive flexibility. As expected, young adults performed significantly better than preschoolers in all motor and cognitive functions tested. These differences were particularly evident in the motor functions manual dexterity, speed and dexterity, and strength, as well as in the cognitive function working memory. The results of the regression analyses of the preschool children indicated that executive functions (and here especially working memory) are involved to some degree in almost all motor demands. In contrast to the results of the preschool children, executive functions did not explain significant portions of variance in motor functioning in young adults. In summary, the results of the present study indicate that EFs have a greater impact on successful motor performance in preschool age than in young adulthood, and that working memory seems to play a pivotal role in 5- to 6-year-old children. Furthermore, the results clearly demonstrate that generalised predictions about the interrelations of motor and cognitive functions across different age groups and ability levels are not possible. Rather, interactions between the domains seem to be subject to dynamic and structural changes across child development, before they become more stable and predictable as EFs mature during young adulthood.

Children's ball-catching characteristics from task difficulty and developmental changes' perspectives

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ABSTRACT

Young children often get too close to a target when attempting to catch a target at a specified point, which results in difficulties in catching accurately. This is more often observed in younger children attempting to catch a slow-moving target. This study experimentally investigated the effects of the distance between a child and a ball, as well as developmental changes in children's accuracy of catching slow-moving balls in young children. Participants were young children aged 3 to 5 years. The apparatus used in the experiment included a ball moving from a starting point to an arrival point on inclined steel rails at a low velocity. Participants were asked to move with the ball from the starting point to the arrival point and catch the ball at the arrival point. The experiment was consisted of practice and test phases. We changed the angle of the two trajectories between the ball starting point and arrival point and between the participant's starting point and the point where the ball was caught (i.e., ball arrival point). Three types of angles were set in the practice phase, which was at 22.5, 67.5, and 90 degrees. The participants were assigned to one of the three conditions. The distance between a participant and the ball was shortest in the 22.5° condition and longest in the 90° condition. After finishing the practice phase, all the participants conducted the test phase, in

KEYWORDS

Children; Timing; Ball Catching; Distance from Participant and ball; Development

which they started the task from the 45° condition, which was new to the participants. We compared the accuracy of the ball-catching behavior in the test phase based on the participants' age (low and high groups) and the angle. Results indicated no significant difference in the angle condition on accuracy. In contrast, there were significant differences in accuracy based on age. The results indicated that the children in the higher-age group caught the ball more accurately than in the lower-age group. The above results suggest that children's ball-catching tasks should be set after considering the relationship between the developmental stage and the distance between the ball and the child. We have discussed the distance of participants' movements and the degree of participants' coordination with the ball's movement.

Pre-Reflexive processes in movement practices: perception-action through phenomenology and embodied cognition

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ABSTRACT

This study consists of a discussion on pre-reflexive processes in movement practices. The objective of this investigation is to present and explore those processes based on perception-action through both phenomenology and embodied cognition. During movement practices, there is not much time for the practitioner to reflect before choosing and doing each technique or gesture. In addition, there is a level of action which happens before a decisional thought, even when decision making processes occur. This level of action with few or no reflection is what we call a pre-reflexive one. To reach this point we rely on a theoretical methodology from current research on perception-action processes. In the theme of the human movement, perception-action processes are highlighted as our primary way of engagement with the world, without necessarily thinking about it. Our space-time entanglement (through the body) and the perception of otherness are primary, while the process of identification through reflection of what was perceived requires more time. We claim that perception is already an action, as it is a way of engagement to the world. This idea of consciousness as something that we do related to an object and embedded in a world can be found both in phenomenology and embodied cognition literature. Thus, as a result of this study, we understand pre-reflexive processes as an important level of primary consciousness, tied to how we perceive and act towards otherness and the environment. This can broaden the way we usually consider both learning procedures and enhancing performance in movement practices. Modulating pre-reflexive processes instead of only explaining the gestures can be extremely fruitful to intervene more directly and immediately in the situation the body is dealing with. Considering these direct interventions along with technical explanations can enable the

KEYWORDS

phenomenology; embodied cognition; movement practices; perception; embodiment

bodies to be challenged not only to learn or master a technique but also to generate precise perceptions and movements in the situations we are in. We can conclude stating that one can only learn how to do something while trying to do it. Then, embodied and embedded approaches such as those found in phenomenology and cognitive sciences might redefine the way we work towards movement practices.

Wrist proprioceptive deficits on motor dysfunction in young adults with probable developmental coordination disorder

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ABSTRACT

Proprioceptive deficits have been found to be associated with motor dysfunctions in pediatric developmental coordination disorder (DCD). However, little is known if such signs of somatosensory dysfunctions persist into adulthood. In this cross-sectional study, we systematically evaluated wrist position sense acuity and motor functions in adults with probable developmental coordination disorder. The aim is to verify: 1) if wrist position sense acuity is impaired in adults with probable DCD, and 2) how their wrist position sense acuity is linked to motor functions. Based on the previous research conducted in children with DCD, we hypothesized that young adults with probable DCD would demonstrate similar proprioceptive difficulties. Participants were twenty-seven young adults aged between 19-22 years: nine participants with probable DCD (20.32 ± 0.34 years) and eighteen controls (20.44 ± 0.72 years). Using a wrist bimanual manipulandum, all participants performed a joint position sense paradigm that consists of a contralateral position matching and an ipsilateral position reproduction task of the wrist. The position sense tasks required participants to either match the reference position (20° of wrist flexion) of the opposite wrist from a neutral position (0°) or reproduce the previously sensed reference position with the same hand. Position sense error (PE) and error variability (SDPE) of both tasks were obtained to measure position sense acuity. The standardized motor assessment: Bruininks-Oseretsky Test of Motor Proficiency 2nd Edition, Long-Form (BOT-2, LF) was employed to measure different domains of motor ability in all participants. We found that, as predicted, adults with probable DCD exhibited a significantly higher wrist SDPE on both contralateral and ipsilateral conditions ($p < .01$) compared to control adults, indicating individuals with probable DCD demonstrated the higher random error of wrist position sense. No significant difference was detected for PE between the probable DCD and control group. Furthermore, wrist position sense acuity on the ipsilateral condition was significantly linked to BOT-2 manual coordination, body coordination, and strength and agility scores (p 's $< .05$). This study documents the wrist proprioceptive acuity is

KEYWORDS

motor control; development; position sense; somatosensory; upper limb

impaired in young adults with probable DCD. The finding supports the view that proprioceptive deficits are linked to motor dysfunction in DCD. Such proprioceptive and motor deficits in pediatric DCD are likely to be persistent into adulthood.

Embodiment of time sense in specific movements of basketball players

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ABSTRACT

Studies on imaging time are being conducted since many years, and it is well known that elite athletes have an excellent time sense. However, results of previous studies have been obtained from experiments in which participants were asked to recall their own experiences in a time-conscious situation. In this study, we examined the latent sense of time and its mechanism embodied in the specific movements of skilled players by targeting 24 seconds, which is related to one of the most important violation rules in basketball. Twenty participants (ten skilled and ten unskilled) watched a 24 seconds edited video of a game played by another player (including multiple changes of attacker's rights) without knowing that it was an experiment on time perception, and counted the number of seconds while recalling the video after the fact. They operated the stopwatch by themselves and counted with their eyes closed. Hence, the error from 24 seconds was calculated in absolute values. The error was significantly smaller for the skilled than for the unskilled group (3.01 ± 2.89 vs. 5.69 ± 4.61 sec, $p < 0.01$). Furthermore, the variance was significantly smaller in the skilled than in the unskilled group (2.36 ± 2.13 vs. 5.82 ± 5.08 sec, $p < 0.001$). The smaller error value by the skilled group implies greater accuracy in time perception, and the smaller variance implies greater stability. This study is unique as the participants watched the video without being aware of the time and counted it after the fact, and also counted others' experiences rather than their own. The skilled participants may have been able to demonstrate an accurate and stable sense of time because of their observing the movements of the player in the video as their own, i.e., from a first-person observation, causing motor-empathy. When motor-empathy is triggered, the concerned muscles contract in accordance with the movement of the people in actual motion. Interestingly, this feature is similar to internal imagery, which can be described as compositive imaging that involves not only visual, but also auditory and muscular sensation. In other words, the skilled participants were able to observe the other player's movement from the aspect of muscular sensation, and count the time as if recalling their own experiences. In conclusion, basketball players have an accurate and stable sense of the specific time of 24 seconds, and this time sense may be demonstrated by motor-empathy for the movements of another player.

KEYWORDS

imaging time; motor-empathy; first-person observation; internal imagery; mirror neuron

The quiet eye effect: a test of the pre-programming and online control hypotheses

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ABSTRACT

Prolonged quiet eye (QE) duration is associated with greater performance in various types of targeting and interceptive tasks. However, the mechanism by which QE affects performance remains debatable. This study aimed to test the validity of the pre-programming and online control hypotheses using electromyography (EMG), electrooculography (EOG) and electroencephalography (EEG) during a golf putting task. Twenty-one college students (mean age: 21.71 ± 1.95 years) were recruited for this study. All participants were right-handed and had normal vision, and all were novices at golf putting. Each participant performed 100 golf putting trials during which the putting performance, EMG, EOG, and EEG signals were recorded. We used EMG to identify the initiation of backswing, EOG to determine the QE period, and EEG to examine the activity of movement-related cortical potentials (MRCPs) during the QE period. IBM SPSS 21.0 was used for data analysis. QE_{total} (the total QE duration from QE onset to QE offset), QE_{pre} (QE occurring before movement initiation), and QE_{post} (QE occurring after movement initiation) of the hit and missed trials were analyzed using paired samples t-tests. Effect sizes were calculated using Cohen's *d*. A repeated-measure analysis of variance was used to analyze the EEG amplitude data during QE_{total} period. Results showed that there was a significantly longer QE_{pre} duration in the hit trials than in the missed trials, $t(18) = 2.221$, $p = .039$, $d = .509$. The QE_{post} duration in the hit trials was also demonstrated significantly longer than in the missed trials, $t(18) = 3.486$, $p = .003$, $d = .800$. There was a significantly longer QE_{total} duration in the hit trials than in the missed trials, $t(18) = 3.144$, $p = .006$, $d = .721$. Besides, greater cortical activation in the MRCPs was observed within the prefrontal, premotor, and parietal cortices during successful putts compared with failed putts, $F(1, 20) = 12.979$, $p = .002$. These findings suggest that QE serves both pre-programming and online control roles in supporting golf putting performance. The use of objective psychophysiological measures in the current study provides a better understanding of the potential mechanisms of QE in improving performance.

KEYWORDS

quiet eye; pre-programming; online control; movement-related cortical potentials; golf putting

The effects of visual feedback on learning efficiency of tennis stroke in physical education lessons

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ABSTRACT

The purpose of this study is to investigate the effects of visual feedback intervention on the learning efficiency of basic tennis strokes in physical education lessons. In recent years, Taiwanese professional tennis players have well performed in international tennis competitions. Thanks to the widespread broadcast of the Grand Slam tournaments and other international professional tournaments or domestic tennis matches, more and more nationals start to play tennis. Usually in general physical education teaching, a traditional teaching method is teachers let students learn the essentials of movement skills through explanations and physical education demonstrations. If teachers using multimedia to assist their teaching, students could stimulate their sense of hearing, sight and motor ability three aspects of perception at the same time through the sound, images, and motion. The teaching content of this kind of equipment and activity is in line with the program of student physical education in colleges and universities. The data were obtained from one hundred and thirty-six undergraduate students enrolled in tennis PE lessons. The subjects were assigned randomly into two groups: the visual aids group (sixty-six people) and the control group (seventy people). Both groups received the same basic tennis stroke training for eighteen weeks. The subjects in the visual aids completed the forehand and backhand training with the multimedia visual aids teaching materials, while the control group completed the training with traditional teaching materials. A two-sample t-test was used to investigate the learning efficiency between two groups by comparing the post-test scores. The results showed that the multimedia visual aids group had higher post-test scores than that of the control group. In conclusion, under general tennis teaching for the learners who cannot easily realize and perform the movement of forehand, using the visual feedback on learning efficiency of tennis stroke can help them to learn tennis stroke skill more efficiently and have great improvement on it. This has an important effect on learning forehand and backhand of tennis stroke skills. The multimedia visual aids intervention could improve the learning efficiency of the basic strokes in university tennis physical education lessons. In the future, the multimedia learning platform could be considered when conducting online teaching and performance evaluation.

KEYWORDS

multimedia teaching; tennis stroke; performance evaluation

A review of attentional focus research

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ABSTRACT

Due to the limited ability of human attention and brain processing, it is necessary to reasonably allocate limited attention resources to better learn and complete motor skills. The attentional focus (FA) is that an individual concentrates attention resources on a certain aspect of skill mastering, and is considered to be a key factor

KEYWORDS

attentional focus; attention resources; sport learning; sport performance; exercise rehabilitation

affecting the learning effect and performance level of motor skills, which can effectively improve the individual's athletic ability. With the continuous deepening of research, basic research on FA has been gradually enriched. However, there is currently a lack of comprehensive research on FA. The aim of this study was to form a more systematic research overview to provide research references and entry points, so that readers can fully understand FA and related research, and athletes can make full use of their attention resources during exercise and effectively improve their sports performance. This article used the literature review method to sort out the psychological phenomenon of FA from the five aspects of concept and classification, measurement, function, mechanism, and group differences. We elaborated the possible future research directions, such as the relationship between FA and quiet eyes or flow, the exploration of the physiological mechanism of FA and its application in other fields. The findings of this study are as follows, (1) most studies find that the advantage of external attentional focus exists in a single sports event, dual or multi-task performance; (2) although most researchers believe that the external focus of attention is beneficial for all athletes, there are researchers who believed that there are group differences in the focus of attention, that is, the external focus of attention has a greater effect on expert than beginners; (3) in the combined research of FA and other mental phenomena, it is found that FA can promote the athletes to form a positive exercise experience to improve sports performance; focus of attention training and quiet eye training can improve the athlete's attention control ability, thereby improving sports performance; (4) previous research mostly explores the physiological mechanism of FA from individual changes in myoelectric potential and brain changes. For the focus of attention research, we should combine advanced technology and research hotspots on the basis of the predecessors to explore the potential role of focus, and make full use of FA to improve individual athletic ability.