

Editorial

Monitoring and Promoting Physical Activity and Physical Fitness in All Age Groups

Bojan Masanovic ¹, Stevo Popovic ^{1,2} and Juel Jarani ³

¹Faculty for Sport and Physical Education, University of Montenegro, Niksic, Montenegro

²Western Balkan Sport Innovation Lab, Podgorica, Montenegro

³Faculty of Movement Sciences, Sports University of Tirana, Tirana, Albania

Correspondence should be addressed to Stevo Popovic; stevop@ucg.ac.me

Received 25 March 2023; Accepted 25 March 2023; Published 3 April 2024

Copyright © 2024 Bojan Masanovic et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

1. Introduction

Modern lifestyle brings with it many different challenges, no less than in the past, but modern challenges are significantly different. Therefore, it is very important to understand most of the challenges that modern man faces. Among other things, one of the most important challenges is the preservation of health. Health was one of the most important resources in the past, and it is just as important today. However, the factors influencing the impairment of good health have changed over time. In order for human being to maintain good health, it had to define the determinants of health and carefully monitor changes in their impact on health status over time. The modern lifestyle has changed dramatically [1, 2], and physical activity and physical fitness have become one of the very important determinants of the modern men's health [3]. In the past, these determinants were not the focus of scientists' attention because physical activity and physical fitness were taken for granted. However, the lifestyle in the last few decades has led to the physical inactivity of modern man [4, 5], which was recognized by scientists who established in their research that physical activity and physical fitness are associated with health benefits for individuals of all ages. Thus, it is now widely known that achieving a sufficient level of physical activity and physical fitness additionally contribute to better health-related biomarkers [6]. Therefore, if time is spent in sedentary behavior, it is realistic to expect negative health outcomes. Understanding and developing strategies to promote physical activity behavior is

much more important than in the past, as it is essential to improve physical fitness levels [7]. Although, at the beginning, special attention was focused on children, later these strategies were also focused on other generations, primarily young people, adults, and also the elderly. There is a large number of studies that increasingly confirm that negative outcomes are visible in individuals of all ages [8–10]. Facing modern challenges and the desire to improve the health status of all age groups, this research topic was created, with the intention of helping the upbringing of monitoring and promoting physical activity and physical fitness in all age groups.

2. Contribution to the Field

The purpose of this research topic was to gather the latest knowledge in the field of monitoring and promoting physical activity and physical fitness in all age groups. The eight studies that emerged as the output of this special issue have advanced the field in several ways.

First, some very interesting findings were reached in this research topic related to the monitoring of trends in morphological characteristics among children. The authors of this study have examined the current state, dynamics, and direction of changes in morphological characteristics, over a 30-year period in Serbian children and adolescents among 7- and 11-year-old, and observed significant increase in height, body mass, and BMI in 7-year-old children from 1990 to 2020 [11]. On the other hand, Han et al. [12] have

confirmed the effectiveness of a family-based intervention that integrated the family and preschool based on a smart-phone app they created to improve the moderate-to-vigorous physical activity and physical fitness of preschool children during COVID-19.

Another important stream of work is reflected in the studies that analyzed: (1) traditional Chinese exercise (qigong) for chronic obstructive pulmonary disease [13] and (2) exercise rehabilitation among cancer patients [14]. These studies help us understand the therapeutic properties of exercise. Specifically, the authors of the first mentioned study have conducted systematic review and meta-analyses and reached scientific evidences that can help for the management of chronic obstructive pulmonary disease, while the second group of authors has conducted a bibliometric and visualized knowledge graph analysis and reached the research hotspots and frontiers of exercise rehabilitation among cancer patients via CiteSpace.

One more important stream of work is reflected in three studies that analyzed the physical performance of sportsmen. Akpınar [15] had investigated the motor lateralization profiles of youth soccer players and compared the same lateralization to nonathletes and reached very interesting outcomes that participation in soccer training improves lower limb coordination and decreases motor lateralization. Furthermore, Türkmen and Biçer [16] have examined the effects of an 8-week orienteering training on physical fitness parameters in adolescents and confirmed that orienteering training once a week for eight weeks resulted in positive developments in physical fitness parameters. Zheng et al. [17] have followed the Cochrane Collaboration guidelines and assessed the effect of short- and long-term detraining on trained individuals' $\dot{V}O_2\max$ through a systematic review and meta-analysis and reached interesting scientific evidences that are reflected in the fact that subjects with a higher $\dot{V}O_2\max$ training status have a greater decline in oxygen uptake after long-term training cessation.

Lastly, de Souza et al. [18] have evaluated ultramarathons with distances above 180 km in relation to runners' peak ages and performances and reached interesting data. They monitored the period between 2010 and 2020 and observed the following: (1) increase in the number of ultramarathon running events; (2) Europe had the highest number; (3) women had low participation; and (4) performance progression fell.

3. Conclusion

This special issue of the journal Biomedical Research International entitled "Monitoring and Promoting Physical Activity and Physical Fitness in All Age Groups" was created, with the special intention of helping the upbringing of monitoring and promoting physical activity and physical fitness in all age groups. It is very difficult to conclude whether the goal of this research topic was achieved or not. The subject was set very broadly, and any advance is satisfactory. Namely, although expectations were higher, it is the fact this research topic justified its existence. Eight high-quality studies have been collected that have advanced the

field of monitoring and promoting physical activity and physical fitness in all age groups. To this end, this research topic leveraged high-quality research studying changes in all generations, from children to elderly, to offer guidance to scientists in the first place, and also to practitioners and policy makers around the globe on how to monitor and promote physical activity and physical fitness as well as alleviate the consequences of physical inactivity.

Conflicts of Interest

The authors declare no conflict of interest.

Authors' Contributions

SP drafted the manuscript, and two other authors, BM and JJ, revised it. All authors approved the final version.

Bojan Masanovic
Stevo Popovic
Juel Jarani

References

- [1] NCD Risk Factor Collaboration (NCD-RisC), "Worldwide trends in body-mass index, underweight, overweight, and obesity from 1975 to 2016: a pooled analysis of 2416 population-based measurement studies in 128.9 million children, adolescents, and adults," *Lancet*, vol. 390, no. 10113, pp. 2627–2642, 2017.
- [2] NCD Risk Factor Collaboration (NCD-RisC), "Rising rural body-mass index is the main driver of the global obesity epidemic in adults," *Nature*, vol. 569, no. 7755, pp. 260–264, 2019.
- [3] NCD Risk Factor Collaboration (NCD-RisC), "Heterogeneous contributions of change in population distribution of body mass index to change in obesity and underweight," *eLife*, vol. 10, article e60060, 2021.
- [4] H. W. Kohl 3rd, C. L. Craig, E. V. Lambert et al., "The pandemic of physical inactivity: global action for public health," *Lancet*, vol. 380, no. 9838, pp. 294–305, 2012.
- [5] B. Masanovic, J. Gardasevic, A. Marques et al., "Trends in physical fitness among school-aged children and adolescents: a systematic review," *Frontiers in Pediatrics*, vol. 8, p. 627529, 2020.
- [6] D. Renninger, D. J. Sturm, A. Marques et al., "Physical activity and body-mass-index: do family, friends and teachers restrain the risk for physical inactivity in adolescents?," *Sustainability*, vol. 13, no. 13, p. 6992, 2021.
- [7] S. Popovic, H. Sarmento, Y. Demetriou, and A. Marques, "Editorial: monitoring and promoting physical activity and physical fitness in children," *Frontiers in Public Health*, vol. 9, p. 633457, 2021.
- [8] C. Cunningham, R. O'Sullivan, P. Caserotti, and M. A. Tully, "Consequences of physical inactivity in older adults: a systematic review of reviews and meta-analyses," *Scandinavian Journal of Medicine & Science in Sports*, vol. 30, no. 5, pp. 816–827, 2020.
- [9] K. Spiteri, D. Broom, A. H. Bekhet, J. X. de Caro, B. Laventure, and K. Grafton, "Barriers and motivators of physical activity participation in middle-aged and older-adults - a systematic review," *Journal of Aging and Physical Activity*, vol. 27, no. 6, pp. 929–944, 2019.

- [10] X. Y. Wu, L. H. Han, J. H. Zhang, S. Luo, J. W. Hu, and K. Sun, "The influence of physical activity, sedentary behavior on health-related quality of life among the general population of children and adolescents: a systematic review," *PLoS One*, vol. 12, no. 11, article e0187668, 2017.
- [11] G. Đukić, Z. Ahmetović, R. Romanov, D. Stupar, G. Sporiš, and N. Trajković, "Trends in morphological characteristics among 7- and 11-year-old Serbian children: a comparison between 1990 and 2020," *BioMed Research International*, vol. 2022, Article ID 4070658, 8 pages, 2022.
- [12] X. Han, Z. Tian, M. Zhao, and Z. Zhou, "An intervention pattern of family parent-child physical activity based on a smart-phone app for preschool children during COVID-19," *BioMed Research International*, vol. 2022, Article ID 2777079, 10 pages, 2022.
- [13] H. Shi, T. Liu, C. Dong et al., "Scientific evidence of traditional chinese exercise (Qigong) for chronic obstructive pulmonary disease: an overview of systematic reviews and meta-analyses," *BioMed Research International*, vol. 2022, Article ID 7728973, 14 pages, 2022.
- [14] Y. Pan, X. Deng, Y. Zhuang, and J. Li, "Research trends around exercise rehabilitation among cancer patients: a bibliometrics and visualized knowledge graph analysis," *BioMed Research International*, vol. 2022, Article ID 3755460, 11 pages, 2022.
- [15] S. Akpınar, "Participation of soccer training improves lower limb coordination and decreases motor lateralization," *BioMed Research International*, vol. 2022, Article ID 7525262, 5 pages, 2022.
- [16] Ö. Türkmen and B. Biçer, "Effects of 8-week orienteering training on physical fitness parameters among adolescents aged 14–18 years," *BioMed Research International*, vol. 2022, Article ID 5068599, 9 pages, 2022.
- [17] J. Zheng, T. Pan, Y. Jiang, and Y. Shen, "Effects of short- and long-term detraining on maximal oxygen uptake in athletes: a systematic review and meta-analysis," *BioMed Research International*, vol. 2022, Article ID 2130993, 10 pages, 2022.
- [18] R. F. de Souza, M. M. S. Santos, M. Thuany et al., "Ultramarathon evaluation above 180 km in relation to peak age and performance," *BioMed Research International*, vol. 2022, Article ID 1036775, 9 pages, 2022.