

## Editorial

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# Sports for people with disabilities: A way for rehabilitation and social inclusion

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Persons with disabilities are everyday more numerous, reaching a rate of 15% of the world population [1]. Ageing and medicine progress has contributed to increase this number, but the challenge to guarantee them all a high quality life is still incumbent both in advanced countries and in developing ones.

Sports and physical activity are important instruments for improving health, especially for persons suffering from chronic diseases and disability in their daily living [2]. The United Nations' Convention on the Rights of Persons with Disabilities [3] clearly stresses the importance of participating in sporting activities both at a recreational and a professional level. Along this same line, on 20 September 2023 the Constitution of the Italian Republic was amended in article 33 as follows: "The Republic recognizes the educational, social and promotional value of psychophysical well-being of sporting activity in all its forms" [4].

Despite these historic steps forward in political and cultural terms, the way to guarantee access to sports for people with disabilities is still very long, and the recent COVID-19 pandemic has shown that many of the limitations make this road tortuous. Access to sports facilities and availability of competent personnel are still limited for people with physical, sensory and cognitive impairments, and the economic resources dedicated to this purposes are not sufficient in normal conditions and even more so in emergency ones [5].

Nevertheless, the sport-related benefits as an integration of rehabilitation for these patients are supported by solid evidence. Wheelchair users increase their motor skills [6] and quality of life when they regularly

carry out a sporting activity [7]. Moreover, adaptive sports improve social support, physical fitness, fun, and feeling of independence [8]. Also, the fact that the recent European ParaChampionships, held in Rotterdam in August 2023, reached over one million live stream views on TikTok demonstrates that sports could represent a social redemption and full inclusion occasion for persons with disability.

The *Journal of Back and Musculoskeletal Rehabilitation* (JBMR) has traditionally been at the forefront of promoting research on the topic of integration of people with disability, particularly when it is related to musculoskeletal disorders [9]. In our journal, Ocampo-Plazas and colleagues shared the proposal to include fitness for health in the rehabilitation project of amputee patients with altered physical capabilities due to long immobilization, hospitalization periods, and reduction of basic daily activities [10]. At the same time, eminent authors have been hosted here for their research on Paralympic sports and wheelchair athletes. Particularly, Tsunoda and colleagues deepened the important topic of shoulder pain in wheelchair basketball players [11], since it represents an ever-present problem in the field of injuries related to this sport [12]. Similarly, Yildirim and colleagues launched the innovative proposal of a rating scale specifically dedicated to shoulder pain assessment in these athletes [13], and also tried to investigate the relationship between shoulder pain and trunk control in this sport [14], becoming points of reference for research on the centrality of trunk stabilization in preventing injuries [15] and enhancing athletic performance [16].

Therefore, the dissemination of sports for people with disabilities requires further efforts by the scientific community to promote psycho-physical wellbeing for patients, knowledge for health professionals and safe sports practice for elite and amateur athletes; these are the reasons why I would invite you to consider it in your future research.

Also the current issue of JBMR deals with these concerns, and it is with great pleasure that the Editor's Choice is awarded to Lippi and colleagues, who highlighted that multicomponent interventions including rehabilitation might be considered a suitable option to improve health management in spinal cord injury patients. Their paper has been made freely available for you to read, download and share.

## References

- [1] World Health Organization. World report on disability, 2011. Available from: <https://www.who.int/teams/noncommunicable-diseases/sensory-functions-disabilityand-rehabilitation/world-report-on-disability> [Accessed 05 Sep 2023].
- [2] Invernizzi M, de Sire A, Renò F, Cisari C, Runza L, Baricich A, Carda S, Fusco N. Spinal Cord Injury as a Model of Bone-Muscle Interactions: Therapeutic Implications From *in vitro* and *in vivo* Studies. *Frontiers in Endocrinology*. 2020; 11: 204. doi: 10.3389/fendo.2020.00204.
- [3] United Nations. Article 30 – participation in cultural life, recreation, leisure and sport, 2022. Available from: <https://www.un.org/development/desa/disabilities/conventionon-the-rights-of-persons-with-disabilities/article-30-participation-in-cultural-life-recreation-leisure-and-sport.html> [Accessed 10 Jun 2023].
- [4] Italian Constitution. Article 33, 2023. Available from: <https://www.sport.governo.it/it/attivita-nazionale/sport-in-costituzone/lo-sport-entra-nella-costituzione-italiana> [Accessed 24 Sep 2023].
- [5] Fari G, Fiore P, Ricci V, Zonno A, Joksimovic M, Petruzzella D, Gioia G, Giarrizzo D, Mastrotillo S, Coretti B, et al. The Impact of the COVID-19 Pandemic on Outdoor Physical Activities for People with Disabilities, including the Risks for Psychophysical Well-Being. *Sustainability*. 2023; 15: 1436. doi: 10.3390/su15021436.
- [6] Duvall J, Satpute S, Cooper R, Cooper RA. A review of adaptive sport opportunities for power wheelchair users. *Disabil Rehabil Assist Technol*. 2021; 16(4): 407-413. doi: 10.1080/17483107.2020.1767220.
- [7] Te Velde SJ, Lankhorst K, Zwinkels M, Verschuren O, Takken T, de Groot J, HAYS study group. Associations of sport participation with self-perception, exercise self-efficacy and quality of life among children and adolescents with a physical disability or chronic disease—a cross-sectional study. *Sports Medicine – Open*. 2018; 4(1): 38. doi: 10.1186/s40798-018-0152-1.
- [8] Diaz R, Miller EK, Kraus E, Fredericson M. Impact of Adaptive Sports Participation on Quality of Life. *Sports Medicine and Arthroscopy Review*. 2019; 27(2): 73-82. doi: 10.1097/JSA.0000000000000242.
- [9] Nanjo K, Ikeda T, Nagashio N, Sakai T, Jinno T. Psychological factors associated with instrumental activities of daily living disability in older adults with moderate to severe knee osteoarthritis. *Journal of Back and Musculoskeletal Rehabilitation*. 2023; 36(4): 911-920. doi: 10.3233/BMR-220197.
- [10] Ocampo-Plazas ML, Prieto-Mondragón LDP, Solorzano MA, Escobar FC. Fitness for health assessment in unilateral lower limb amputation: The Evam1 battery. *Journal of Back and Musculoskeletal Rehabilitation*. 2020; 33(4): 569-579. doi: 10.3233/BMR-181441.
- [11] Tsunoda K, Mutsuzaki H, Hotta K, Tachibana K, Shimizu Y, Fukaya T, Ikeda E, Wadano Y. Correlates of shoulder pain in wheelchair basketball players from the Japanese national team: A cross-sectional study. *Journal of Back and Musculoskeletal Rehabilitation*. 2016; 29(4): 795-800. doi: 10.3233/BMR-160691.
- [12] Fari G, Macchiarola D, Quarta F, Bianchi FP, Caforio L, Cutti AG, . . . Ranieri M. Epidemiology of injuries in wheelchair basketball: Trauma versus overuse mechanism and prevention rehabilitative strategies. *Journal of Prosthetics and Orthotics*. 2023; 35(1): 32-37. doi: 10.1097/JPO.0000000000000458.
- [13] Yıldırım NÜ, Büyüköztürk Ş, Bayramlar K, Özen N, Külünkoğlu BA, Çoban Ö. Developing a shoulder pain scale for wheelchair basketball players. *J Back Musculoskeletal Rehabil*. 2019; 32(3): 479-485. doi: 10.3233/BMR-181192.
- [14] Yıldırım NU, Comert E, Ozengin N. Shoulder pain: a comparison of wheelchair basketball players with trunk control and without trunk control. *Journal of Back and Musculoskeletal Rehabilitation*. 2010; 23(2): 55-61. doi: 10.3233/BMR-2010-0250.
- [15] Fari G, Latino F, Tafuri F, Dell'Anna L, Raelo MV, Fai A, De Serio C, Intonti G, De Salvo AL, Ricci V, et al. Shoulder Pain Biomechanics, Rehabilitation and Prevention in Wheelchair Basketball Players: A Narrative Review. *Biomechanics*. 2023; 3(3): 362-376. doi: 10.3390/biomechanics3030030.
- [16] Macchiarola D, Megna M, Quarta F, et al. With or without straps? A pilot study to investigate whether restraint devices affect the wheelchair basketball players' performance [published online ahead of print, 2023 Mar 1]. *Prosthet Orthot Int*. 2023; doi: 10.1097/PXR.0000000000000218.