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Parasport medicine and its challenges: Between athletic competition and the disability rights movement - a narrative review

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Abstract

Introduction:

The field of *Paralympic medicine* examines the healthcare issues that are specific to athletes with disabilities. This article presents a historical phenomenon in which the introduction of further activities for patients with neurological conditions led to the hosting of the Paralympic Games. The article describes the complexity of inclusivity in disability health research and outlines the historical context of the emergence of this field of sports medicine. It also presents the main challenges posed by the developing parasport. One of the most significant issues is to guarantee that competition is conducted with the greatest degree of equity possible. This entails ensuring the precision of classification, preventing the over-medicalisation of athletes. It is also imperative that athletes with special requirements are provided with the appropriate support and equipment. The creation of adequate care pathways requires a challenging process, largely due to the inconclusive nature of research findings over the years. Further investigation is necessary to gain a more nuanced understanding of this relatively new area of study.

Purpose of work: The aim of this article is to provide an overview of the broader challenges that paramedicine is facing in relation to the rapid development of this branch of sports medicine.

Materials and methods: This article is based on the literature found in *Pubmed* database and other scientific databases. References were researched using following keywords: *paralympic games, persons with disabilities, paramedicine, para-athletes,*

Conclusions: The advancement of Paralympic medicine is markedly expedited by a synthesis of qualitative and quantitative research methodologies. The integration of these two approaches yields invaluable insights into the personal perspectives of athletes on their health, while also facilitating statistically significant, evidence-based results on the analysis of large groups of athletes.

Keywords: *Olympic Games, Disabilities, Competitive Sports, Para-Sports, high performance sport, rehabilitation, athletes with disabilities*

Introduction

The Paralympic Games are one of the largest international events for athletes with disabilities. The Paralympic Games are currently presented as part of the Olympic Festival and are formally part of the Olympic Movement. However, it has only been 20 years since this occurred (1). Despite the similarity of the names, which would suggest a common heritage between the Olympic Games and the Paralympics, the former has a history dating back to ancient Greece, while the latter is a relatively recent initiative. The similarity of the names of the two events also suggests a dichotomous division of their participants into ‘able-bodied’ and ‘disabled’, which creates some ambiguity, as people with physical impairment do not belong to a homogeneous group (2). Over time, a number of different terms have been employed to describe individuals with disabilities. The term 'disabled' is being increasingly replaced by the more empowering 'persons with disabilities' (PWD) in both the social sciences and medicine (3). This is due to the positive connotation associated with mentioning the person at the outset. This is an example of the 'people first' approach to language, which is designed to empower individuals, such as athletes with physical or mental impairments, by focusing on their identity rather than their health condition (4).

This article will adopt such inclusive nomenclature, recognising that medicine still struggles with non-stigmatising terms that do not exclude existing diagnostic criteria, which can lead to confusion.

From medicine to sport - social and historical context of paralympic games

The first competitions, which began the flourishing development of initiatives to encourage people with disabilities to participate in a wide range of sports, were held on the grounds of a hospital for World War II veterans - that suffered from permanent spinal cord damage (5). In the introductory period of competitive sports for individuals with impairments, the categorisation of competitors was based on medical classifications. Consequently, participants were grouped according to their diagnosis, with categories encompassing those with specific disease entities. Conversery, para sports in the 21st century are moving away from strictly medical models of norm-setting to allow athletes to compete without the incessant shuffling of medical classifications that they may be familiar with from other walks of life (5).

The increasing expected survival time of wounded soldiers presented a new challenge for public health. The attempt to activate and reintegrate them into society had a secondary impact on people with other disabilities (including congenital ones). Previously marginalised

groups began to be included in the cultural spaces of sport. As is the case with most minority groups, people with disabilities were already seeking ways to be included in the sporting system. In the nineteenth century, self-organised sports clubs for people with deaf or hearing impairments emerged. In the 1980s and 1990s, a small number of athletes with disabilities demonstrated their abilities in competitive sports. Some of them achieved success in mainstream sporting events, such as Neroli Fairhall, who was the first person with a disability to compete in the Olympic Games (3).

The impetus provided by the growth of movements for the recovery of veterans across Europe and the United States has facilitated the involvement of athletes with disabilities other than military-related injuries. This includes individuals with hearing or visual impairments and those who have sustained significant orthopaedic injuries earlier in life. The prior occurrences had a significant impact on the disabled community, which ultimately led to the establishment of the International Paralympic Committee (IPC) in 1989 (3). The IPC's mission is to facilitate the achievement of sporting excellence by Paralympic athletes and to serve as an inspiration to others. In the preceding year, the organisers of the Olympic Games in Seoul, South Korea, made a commitment to host both the Olympic and Paralympic Games at the same venues and with the same accommodation for athletes (2).

Paramedicine

Paralympic medicine is the term used to describe healthcare issues related to the Paralympic athletes (6). While the Paralympics are intended to move away from medicalising participants, the medical aspects of the competition cannot be entirely ignored. Firstly, it is important to ensure that athletes with special needs have access to the necessary support and equipment to train at a level that is comparable to that of 'able-bodied' athletes of a similar class (7). It must be kept in mind that Paralympic athletes also train at a high performance level (8, 9).

Secondly, to ensure the fairest possible competition, in which the decisive factor for victory is in fact the sporting result achieved, which is made up of various performance elements such as psychological profile, level of training or individual talent (5). In the absence of a classification system that is sufficiently precise to ensure fair competition and that does not overly medicalise the athletes, there is a risk of jeopardising the fundamental principles of free competition (10). One such instance is the situation that occurred in Sydney, Australia, in 2000, where it was discovered that participants in the basketball competition for individuals with intellectual impairments did not possess the required level of disability to qualify for the event. This resulted in the players having to be removed from the competition, a situation which, although it might be considered harsh, was the only viable option. As a consequence

of this regrettable occurrence, the necessity emerged for the establishment of a novel classification system, the development of which required a period of 12 years (1). This situation not only compromised the fairness of the games but also precluded individuals with intellectual disabilities from participating in the Paralympics for a period exceeding 10 years. It is noteworthy that this is a significant duration in the lives of many individuals, particularly those engaged in professional sporting activities.

Therefore, despite the apparent paradox, the creation of a precise medical classification of the different groups competing provides athletes with the opportunity to minimise the adverse effects associated with their disabilities. The objective is to transition from a medical model to a more functional, sports-related approach. This is intended to assess the impact of disability on sporting performance. Consequently, athletes with disparate medical diagnoses but analogous sporting opportunities in a specific sport could be classified in an analogous category and compete together. This would guarantee a more equitable and appealing competition (3).

Currently, Paralympic athletes compete in six disability groups: amputation or limb deficiency, cerebral palsy, spinal cord injuries, visual impairment, intellectual disability or a range of physically impairing conditions that do not fit into the other categories, known as *les autres* (fr. others). Each sporting discipline has its own internal classification of the intensity of a given impairment - these are mainly functional criteria (6, 11, 12)**.**

Every four years, approximately 4,000 athletes with diverse types of impairment gather from 160 countries to compete in 20 summer sports. Additionally, approximately 500 athletes participate in the Winter Paralympic Games, which feature five disciplines. The field of Paralympic medicine encompasses the health-care issues of these athletes (5).

These figures permit us to conclude that this area of sports medicine is both broad and relatively young, as evidenced by the preceding section of this article. The challenges faced by this field of sports medicine are similar to those encountered by sports medicine as a whole, in addition to which it is also challenged by the specific health needs and facilities required by athletes with disabilities (13). Managing the highly complex medical histories of athletes with disabilities, often with multiple comorbidities, is a significant challenge for modern medicine and public health (1, 8, 12).

In addition to the difficulties that athletes in general face in pursuing a career and achieving a state of well-being, such as burnout, fatigue (resulting from, among other things, poor quality of sleep (14)), and impaired contact with family; athletes with disabilities face an additional

challenge - the tendency to view their physical health as a major impediment to daily functioning and success. This is in contrast to classic groups of 'able-bodied' athletes, who do not share this perspective (10).

On the basis of the qualitative research conducted from the perspective of para-athletes, we conclude that the daily struggle with the physical pain associated with disability, the instability associated with their impairments, and the secondary conditions associated with their illnesses contributed to this negative perception of their physical condition (15). In light of the limitations of existing research on athletes' self-assessment of their relationship with their bodies, namely that it has been conducted on a small group and based on interviews rather than a detailed examination by a professional, there is a clear need to design new research exploring this topic in more detail (12).

The medical analysis conducted over the period 2000-2020 revealed that the disease profiles of "able-bodied" athletes and athletes with disabilities are comparable. This may indicate a similarity between the levels of competitiveness observed at the Paralympic and Olympic levels (11, 16, 17).

The currently available research findings indicate that athletes with disabilities do not have a statistically higher injury frequency. However, it is important to note that researchers Blauwet and Willick (8) have demonstrated that, in certain instances, musculoskeletal injuries that are typically considered harmless can have more serious consequences for para-athletes than for able-bodied athletes training in the same sports. These differences have been documented primarily in the regions of the spine, shoulders, hips, and thighs. It is postulated that shoulder trauma may result in the premature cessation of an elite swimmer's career. In contrast, the same injury in para-athletes not only has implications for their athletic careers but also negatively affects their current and long-term quality of life (8, 12).

The overall disease profile, exact ratio of injuries to infections and acute to chronic conditions ratio in para-athletes is difficult to assess due to the inconclusive nature of research findings over the years. This precludes the possibility of forming definitive conclusions (9, 12). The present studies offer an opportunity to design a meta-analysis that would provide a chance to shed light on these issues and create specific disease models and care pathways for the management of athletes experiencing health problems during the Paralympic period (18–20).

Conclusions

The current challenge for the field of parasports medicine is to develop a functional, sports-related, and person-oriented approach to athletes that provides them with a satisfactory level of care. As an evolving area of study, further research is required to gain a deeper understanding of this new field. The advancement of Paralympic medicine is considerably facilitated by a synthesis of qualitative and quantitative research approaches. The former provides invaluable insights into the personal perspectives of athletes and coaches on their health, whereas the latter offers statistically significant, evidence-based results on the analysis of large groups of athletes. It is somewhat surprising that there are currently few such studies, given that the World Health Organization (WHO) has identified people with disabilities as the largest minority group in the world, representing 15% of the global population (21).

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