INCLUSION IN SPORTING EVENTS: PERSPECTIVE FROM ATHLETES WITH DISABILITIES

INCLUSIÓN EN EVENTOS DEPORTIVOS: PERSPECTIVA DESDE EL DEPORTISTA CON DISCAPACIDAD

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Short title:
Inclusion Sporting Events Athlete Disability

How to cite this article:
Montoro-Sanchís, P., González-Serrano, M.H., Pérez-Campos, C., & González-García, R.J. (2025). Inclusion in sporting events: perspective from athletes with disabilities. *Cultura, Ciencia y Deporte, 20*(64), 2275. https://doi.org/10.12800/ccd.v20i64.2275

Received: 17 July 2024 / **Accepted:** 26 January 2025

Abstract

The practice of physical activity and sport among people with disabilities is a topic that is becoming increasingly important. Therefore, it is important to address the different aspects that affect access to physical activity and sport for people with intellectual disabilities. This research focuses on the analysis of the perceptions of athletes with disabilities on the degree of inclusion of a popular sporting event. The main objective of this research is to analyze the perceptions of athletes with disabilities about the degree of inclusion in sporting events. For this propose, an adapted, structured and self-administered scale has been developed and validated to measure these perceptions. The results show that these perceptions of the degree of inclusion of the sporting event analysed fall into two dimensions: 'Facilities' and 'organisation'. The results indicate that the physical accessibility of the venues is crucial, but attention must also be paid to organisational aspects, including staff training, provision of accessible information and individualised attention to the needs of athletes. The results of this study contribute to both theoretical and practical understanding. They underline the need for a holistic and multidimensional approach to sport event planning and delivery. By addressing both physical and organisational aspects, sport events can become catalysts for increased participation of people with disabilities in sport.

Keywords: Inclusion, sporting events, disability, perceptions, athletes.

Resumen

La práctica de actividad física y deporte en el colectivo de personas con discapacidad es un tema que está adquiriendo cada vez más importancia. Por ello, es importante abordar los diferentes aspectos que inciden en el acceso a la práctica de actividad física y deportiva de las personas con discapacidad intelectual. Esta investigación se centra en el análisis de las percepciones de los deportistas con discapacidad sobre el grado de inclusión de un evento deportivo popular. El objetivo principal de esta investigación es analizar las percepciones de los deportistas con discapacidad sobre el grado de inclusión en eventos deportivos. Para ello, se ha desarrollado y validado una escala adaptada, estructurada y autoadministrada, para medir estas percepciones. Los resultados destacan que estas percepciones sobre dicho grado de inclusión del evento deportivo analizado se enmarcan en dos dimensiones denominadas: «espacios» y «organización». Los resultados indican que la accesibilidad física de los espacios es crucial, pero también hay que prestar atención a los aspectos organizativos, lo que incluye la formación del personal, el suministro de información accesible y la atención individualizada a las necesidades de los deportistas. Los resultados de este estudio contribuyen a la comprensión tanto teórica como práctica. Subrayan la necesidad de un enfoque holístico y multidimensional de la planificación y ejecución de eventos deportivos. Al abordar tanto los aspectos físicos como los organizativos, los eventos deportivos pueden convertirse en catalizadores de una mayor participación de las personas con discapacidad en el deporte.

Palabras clave: Inclusión, eventos deportivos, discapacidad, percepciones, deportistas.

Introduction

The sports field plays a role of great relevance in today's society, being considered not only as a practice, but also as a lifestyle and a source of commercial interest (Román et al., 2017). This fact has been reflected in the organization of sporting events that has been progressing in recent decades (Glebova et al., 2023). In fact, research on the organisation of sporting events has focused mainly on measuring and evaluating the impact of holding sporting events, both economically and socially (Desbordes & Falgoux, 2006).

Within this social perspective, in recent years, the Sustainable Development Goals (SDGs) have become more important for organizers of sporting events. In this sense, little by little, there is an increasing interest in holding sporting events that

are inclusive and contributing to the achievement of the objectives of the 2030 Agenda to promote well-being and health in society from an inclusive perspective. This is because inclusive sporting events can promote the social inclusion of athletes with disabilities (McConkey, et al, 2019).

The sports practice of people with disabilities plays an essential role in their social development and in the adoption of healthy lifestyles (Kizar et al., 2021), contributing to their social inclusion (Kamberidou et al., 2019). Competitive-level athletes with disabilities find meaning and purpose in their participation in sport, which adds significant value to their lives (Vieira et al., 2021). In addition, sport has played a key role in the reconfiguration of identities, empowerment and resistance in the face of discriminatory attitudes based on disability, contributing to a more inclusive understanding of this concept (Hernández et al., 2021).

However, there are still various barriers such as inadequate legislation, negative social attitudes, limitations in financial resources, and lack of information that combine to impose significant restrictions on accessibility for people with disabilities (Hammel et al., 2015). This reality is also reflected in the world of sports, which, although it has been observed that both individuals with disabilities and those without disabilities are involved in sports for reasons of enjoyment, health benefits and related social aspects (McLoughlin, et al., 2017), people with disabilities tend to have less participation in programs related to physical activity, sports and recreation (Jiménez & Cárdenas, 2020). People with disabilities frequently suffer from demoralizing exclusion in conventional sports, leading them to resort to adaptation codes for their inclusion (Carroll et al., 2020). Therefore, it is crucial to strengthen the actions of professionals to bring and promote the physical-sports practice of people with disabilities (Hernández et al., 2021). Inclusive participation in sport requires a cultural change and a technical challenge to ensure the real recognition of the participation of people with disabilities, overcoming segregation and promoting design for all in sports rules (Valet, 2018).

Therefore, the present study tries to address what barriers athletes with disabilities encounter to participate in sporting events, and thus promote inclusive sporting events. To this end, the objectives of this study are: (1) to develop and validate a tool to measure the perceived degree of inclusion of athletes with disabilities to participate in sporting events, and (2) to know the main barriers that athletes with disabilities encounter to participate in sporting events.

Literature Review

From Adapted Sport to Inclusive Sport

According to Sanmartín y Pertegaz (2006) the link between the first sports expressions of individuals with disabilities and the medical-rehabilitative context is undeniable. Globally, adaptive sport emerged as a sporting manifestation after World War II, mainly as a result of the disability consequences faced by many of the soldiers.

These events marked the beginning of adapted sport for people with disabilities in its current form. Since then, this field has undergone constant development in terms of its management structures, variety of sports modalities and inclusion processes (Pérez-Tejero et al., 2013).

Therefore, adapted sport is understood as a sports variant that adjusts to the needs of people with disabilities, being the result of adaptations and/or modifications made to facilitate their participation, or because the intrinsic structure of sport allows its practice in an adequate way (Reina, 2010). In this way, some conventional sports have modified certain characteristics to adapt to the needs of a specific group of people with disabilities, while, in other cases, new sports modalities have been established based on the particularities of certain groups with disabilities.

However, in recent years, inclusive sport has gained interest in the scientific community (Carroll et al., 2020; Kamberidou et al., 2019; McConkey, et al, 2019). Inclusive sport refers to the joint practice of sports by people with and without disabilities. Inclusive sporting events for young people with disabilities have substantial positive effects on their social well-being, such as enjoyment, pride and self-esteem (Roult et al., 2015). In addition, they have a positive impact on the social well-being of persons with disabilities by improving their physical condition, mental well-being, and increasing their autonomy (Štangová et al., 2022). Therefore, the importance of promoting inclusive sporting events allows us to broaden the understanding of barriers and facilitators from different perspectives. Works such as those by Riffi Acharki et al. (2023) explored inclusive practices in youth sport, identifying key strategies such as staff training and modifying activities to create a truly inclusive environment that facilitates the participation of young people with disabilities in mainstream sports settings. For their part, authors such as Patatas et al. (2023) analysed the development of parasport from a public policy approach, revealing how these structures and mechanisms influence the organisation of inclusive sporting events. This study highlights the need to consider barriers and enablers not only at the event level, but also in the broader context of sport policies.

Perceived Barriers of Persons With Disabilities to Participate in Sporting Events

With regard to the barriers faced by people with disabilities when joining sports, the lack of support from public entities in the promotion of programs and activities, as well as accessibility to sports facilities, stands out (Badía et al., 2011;

Hammel et al, 2015; Jaarsma et al., 2014; Segura, et al., 2013; Shield & Synnot, 2014;). The lack of adequate sports facilities or infrastructures is the most frequent environmental barrier affecting the sports participation of people with physical disabilities (Jaarsma et al, 2014). Transportation has also been one of the main barriers for people with disabilities to participate in sport (Hammel et al, 2015).

On the other hand, social barriers, such as sports provision, economic factors, lack of knowledge about how to include people with disabilities, and access to sports participation opportunities, limit the participation of people with disabilities in the practice of physical activity and sport (Brown & Pappous, 2020). Access to information (Hammel et al., 2015), ineffective communication, preconceived images of sport (Ives et al., 2019), as well as the lack of support systems (Moran & Block, 2010) or the lack of trained personnel to work with this population (Badia et al., 2011) are also barriers that hinder sports practice in this population. Institutional policies, services and assistance, and attitudes and social support (Hammel et al., 2015) have been identified as the main barriers to sports participation for people with disabilities. Cunningham (2019) emphasised the importance of inclusive leadership in sports organisations, arguing that promoting diversity and inclusion at all organisational levels is crucial to creating truly accessible and inclusive sports environments.

All these environmental barriers have an impact on the sports participation of people with physical disabilities by questioning the perception of safety and confidence to exercise (Mulligan et al., 2012). Therefore, inclusive sporting events can help overcome the barriers faced by people with disabilities and promote social well-being (Klenk et al., 2023; Misener & Darcy, 2014; Roult et al., 2015). These types of events can improve the social well-being of people with intellectual disabilities, but overall participation is consistently lower than that of their peers without disabilities (Klenk et al., 2023). This is because young people with disabilities face numerous material and human barriers that hinder their desire to participate (Roult et al., 2015), depending on the type of disability they present. Therefore, it is important to know the main barriers that these people face at sporting events in order to address them and organize inclusive sporting events.

Materials and Methods

Participants

Table 1
Descriptions of the Participants

Variables	Total (%) n = 67
Gender	
Male	58.2
Female	41.8
Level of education	
Primary Education	11.9
Secondary Education	35.8
Job training	20.9
University Studies	31.3
Work dedication	
Student	55.2
Unemployed	4.5
Civil servant	4.5
Self-employed	20.9
Employed	7.5
Retiree	7.5
Type of disability	
Visual impairment	62.7
Physical disability	14.9
Intellectual disability	4.5
Disability due to cerebral palsy	17.9
Sports experience	
Less than 1 year	1.5
Between 1 and 3 years	17.9
Between 4 and 5 years	17.9
Between 6 and 10 years	34.3
More than 10 years	28.4

The sample is composed of 67 athletes with disabilities, with a mean of 27.88 (SD = 14.16), 58.20% being men and 41.80% women. The experience of participating in sports competitions of the respondents is 3.70 years (SD = 1.12) on average. Regarding the sample size, a statistical power analysis was performed using G*Power 3.1 (Faul et al., 2009) in order to determine the sample size necessary to detect significant effects in the analysis. For a mean effect size ($f^2 = 0.15$), an alpha level of 0.05, and a desired power of 0.80, it was estimated that a minimum sample of 64 participants would be needed. Our final sample of 67 athletes with disabilities slightly exceeds this threshold, providing sufficient statistical power for our analyses.

Regarding the level of education of the athletes, the majority have a level of secondary education (35.80%), followed by university studies (31.30%), vocational training (20.90%) and primary studies (11.90%). Of the people surveyed, the majority of the work corresponds to students (55.20%), followed by employees (20.90%), equaled in percentage by professional athletes and retirees (7.50%) and civil servants and unemployed (4.50%). Regarding the type of disability, most of the respondents have visual impairment (62.70%), followed by disability due to cerebral palsy (17.90%), physical disability (14.90%) and intellectual disability (4.50%). Table 1 shows these data:

Instrument

A structured and self-administered questionnaire was used for data collection. The instrument was designed taking into account the needs of understanding the different types of disability and that assistance was provided when necessary for self-administration.

The first block consists of five general questions to obtain information regarding the sociodemographic aspects of the respondents. The second block consists of a scale adapted from the work of Grills et al. (2017), Jaarsma et al. (2014) and Rimmer and Marques (2012), composed of 17 items whose measurement was carried out through a Likert-type scale between one and five points (one means totally disagree and five strongly agree). With this, the perception of athletes with disabilities about the barriers and facilitators perceived in relation to their participation in sporting events was investigated. It focuses on the accessibility and organisation of events, specifically addressing aspects such as Facilities, accesses, changing rooms, equipment, event staff, volunteer staff, event organisation (compliance with schedules, problem solving, individualised attention), transport and information provided about the event. This instrument focuses on the experience of participants with disabilities, without pretending to directly measure the physical accessibility of the event. Finally, the last block consisted of an open question, in which it was briefly asked what characteristics the athletes thought an event should have for it to be adapted.

Procedure

Data were collected through intentional or convenience non-probabilistic sampling (Kaplanidou, 2012), using a structured and self-administered questionnaire, in the presence of the respondent. The questionnaire was completed during a popular races event, held in April 2024. The latter submitted an informed consent prior to completing the questionnaire in which the subject matter of the project was informed, the benefits of the information collected and the anonymous treatment of the data was guaranteed. All this following the indications of the research ethics committee of the Catholic University of Valencia, under which this study is based, and whose promoter code is UCV/2021-2022/213.

Data Analysis

In a first approximation, a descriptive analysis of the items was performed. In addition, an exploratory factor analysis (AFE) was applied followed by a model of structural equations based on covariance (CB-SEM). With this, it is intended to confirm the linear compounds extracted and estimate the degree of perceived inclusion in the sporting event. For this purpose, the statistical packages Jamovi (version 2.3.26) and SmartPLS (version 4.1.0.2) have been used.

Secondly, a content analysis was carried out to classify the aspects that should be taken into account by the organizers of sporting events to adapt them to people with disabilities, and that they are inclusive. Content analysis is a research technique for the objective, systematic, and quantitative description of the manifest content of communication (Piñeiro-Naval, 2020).

Results

First, the descriptive results of the scale are presented. In them, it is observed that the lowest ratings are those related to individualized attention during the event (M = 2.78, sd = 1.28) and the event information provided in different formats (M = 2.85, sd = 1.27). With regard to the highest ratings, those related to the resources available to the sports support staff (M = 3.81, sd = 1.10) and the problem-solving capacity of the organization of the sporting event (M = 3.61, sd = 1.13) stand out. These results can be seen in Table 2.

Table 2
Barriers and Facilitators Valued by Respondents

	M	SD	A	K
1. The Facilities where the event takes place are usually accessible	3.48	1.12	-0.17	-0.86
2. Access to the sports infrastructures where the event is held is usually accessible	3.34	1.24	-0.34	-0.86
3. The changing rooms (toilets, bathrooms...) of the sports facilities where the event is held are usually accessible	3.39	1.19	-0.08	-1.20
4. The equipment of the facilities where sporting events are held is adapted to our needs	3.22	1.19	-0.11	-0.89
5. Volunteers at sporting events often have the necessary training to help us	3.39	1.27	-0.22	-1.02
6. The staff of the sporting event is prepared to solve our needs	3.39	1.17	-0.45	-0.62
7. Our support staff (guides, trainers...) have all the necessary resources to carry out their activity during the celebration of the event.	3.81	1.10	-0.64	-0.35
8. Event staff understand the needs of athletes	3.40	1.07	-0.04	-0.98
9. When an athlete has a problem, the organization of the sporting event tries to solve it	3.61	1.13	-0.48	-0.72
10. The organization of sporting events complies with the scheduled schedules	3.22	1.18	0.12	-1.01
11. The organization of the events gives athletes individualized attention	2.78	1.28	0.39	-0.49
12. There is a variety of accessible transportation options to get to sporting events	2.90	1.22	0.25	-0.82
13. During the sporting event, we have transport adapted to our needs	3.22	1.20	-0.23	-0.88
14. The sports equipment necessary for our participation in the events is transported without problems	3.52	1.21	-0.21	-1.17
15. The information provided by the organization prior to sporting events is completely accessible to all athletes	3.40	1.21	-0.24	-0.91
16. The information provided by the organization during sporting events is completely accessible to all athletes	3.36	1.24	-0.18	-0.93
17. The information provided by the organization of the events is displayed in different formats, according to the needs of the participants (Braille, easy to read, sign language...)	2.85	1.27	0.33	-0.92

M = Mean; SD = standard deviation; A = Asymmetry; K= Kurtosis

Exploratory Factor Analysis and CB-SEM

To measure the suitability of the data when applying factor analysis, a KMO test was performed, reporting a score of .86, higher than the recommended cut-off point. (≥ .60). For its part, the AFE reported 2 factors. The first of them consists of 4 items with factorial loads between .69 and .87; The second factor was composed of a total of 6 items presenting factor loads between .61 and .83. The percentage of total variance explained for such distributions is 52.3%. On the other hand, the approximation error (RMSEA) was acceptable with a score of .09, lower than the recommended cut-off point of .10 (Hair et al., 1998). These results can be seen in Table 3.

This analysis reported that a total of 10 items were excluded from the model because they did not meet the assumptions of uniqueness in the factors and sufficient factor load to be considered in it.

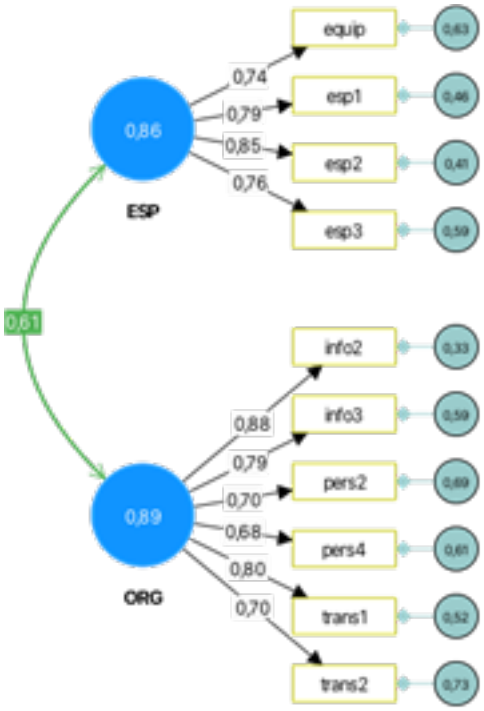
Next, a CB-SEM analysis was performed to confirm the structural relationship of the variables identified in the construct. The results of the model fit obtained are equal to or greater than the recommended cut-off point (.90) (Hu & Bentler, 1999): GFI = 0.90; CFI = .97; TLI = .96. The SRMR value is .06, lower than the recommended point (.08) (Kline, 2005). On the other hand, the normative Chi-square value is 1.28, lower than the recommended cut-off point of 3.0 (Kline, 2005).

Regarding the dimensions obtained, the internal consistency for the dimension called "Facilities" presents a Cronbach's alpha value of .86, while the dimension called "Organization" has a Cronbach's alpha value of .89, both higher than the cut-off point recommended by the literature of .70 (Hair et al., 1998). On the other hand, discriminant validity was calculated using the Heterotrait-Monotrait Ratio (HTMT) presenting an adequate value of .64, lower than the recommended cut-off point of .90 (Henseler et al., 2015). In addition, the extracted mean variance (AVE) for each of the dimensions was .62 for the "Facilities" dimension and .58 for the "organization" dimension, higher than the cut-off point recommended by the literature of .50 (Ringle et al., 2015). Finally, the correlation value between dimensions is r=.61. These data can be seen in Figure 1.

Table 3
Rotated Factor Structure of Scale, Communality, and Internal Consistency

	F1	F2	Commonality
Ítem 1	.738		.356
Ítem 2	.868		.225
Ítem 3	.718		.431
Ítem 4	.688		.474
Ítem 5			.595
Ítem 6		.631	.466
Ítem 7			.760
Ítem 8		.650	.476
Ítem 9			.560
Ítem 10			.608
Ítem 11			.674
Ítem 12		.778	.356
Ítem 13		.610	.565
Ítem 14			.723
Ítem 15			.237
Ítem 16		.833	.199
Ítem 17		.732	.398
Cronbach's alpha	.86	.89	
McDonald's ω	.87	.89	
Eigenvalue	3.54	5.36	
Variance explained	20.8	31.5	
Nº items	4	6	

Figure 1
Cb-Sem Structural Values



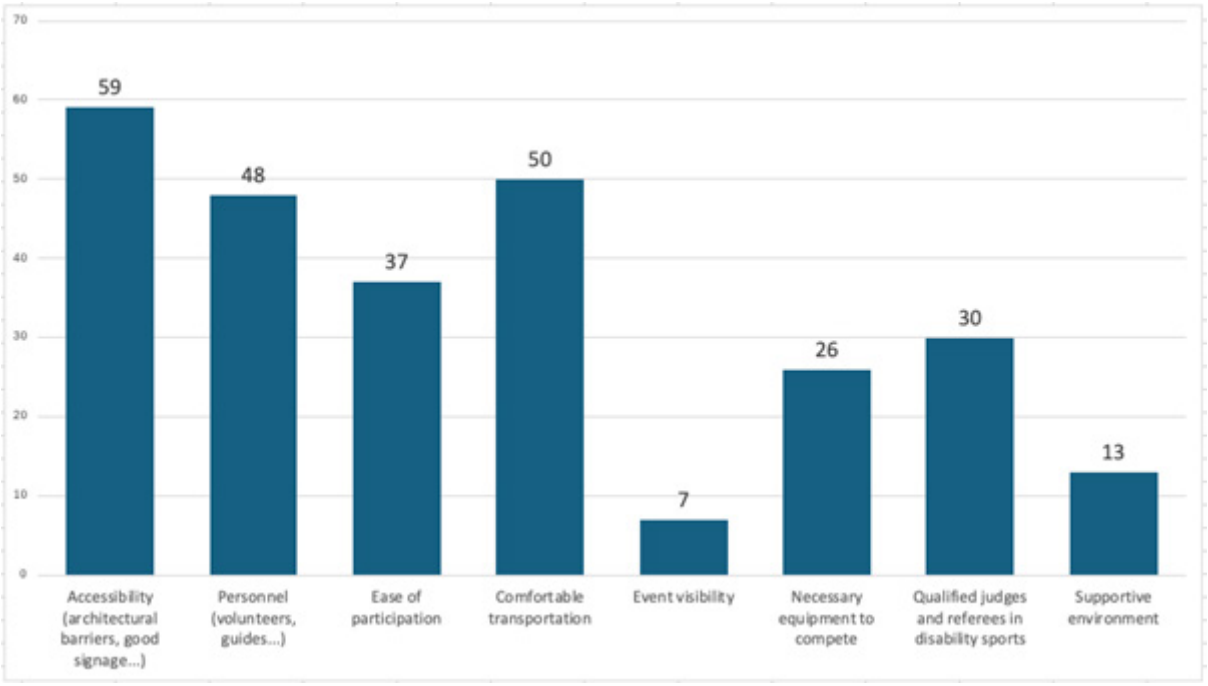
Note. Cronbach's alpha values, standardized coefficients and variance terms of the indicators.

Content Analysis

Finally, the results of the qualitative section of the instrument were analyzed. In this question, respondents were asked to explain the needs that an event should have to be adapted to people with disabilities. The answers obtained were grouped into eight sections: accessibility of the event (referring to the absence of architectural barriers, information adapted to all needs, good signage of possible stumbling blocks...), well-qualified personnel specialized in disability (volunteers, organization guides...), ease of participation in the event, comfortable travel for the athletes, visibility of the event, existence of necessary and specific material for the athletes with disabilities, judges and referees qualified in the regulations of Paralympic sport and a good atmosphere at the event.

With regard to these dimensions, respondents had the greatest emphasis on aspects related to accessibility (59%), followed by comfortable travel at the event (50%), as well as aspects related to the presence of event staff and volunteers who can help them meet their needs (48%). Figure 2 shows the number of references to each of the sections observed.

Figure 2
Graph of the Open Responses of the Questionnaire



Discussion

In recent years, the value of inclusive sporting events in improving the social well-being of people with disabilities has been highlighted (Ballas et al., 2022; Van der Veken et al., 2020). Despite this, there are still great difficulties in organizing and holding them. Thus, the instrument developed and validated can be very useful for sports managers to know the organizational aspects to be improved in the celebration of sporting events, orienting them towards a more inclusive perspective.

The objective of this study was to analyze the barriers and facilitators perceived by athletes with disabilities in relation to their participation in sporting events. The results obtained in the study revealed two main dimensions, called "*Facilities*" and "*Organization*". These dimensions offer a global view of the most relevant aspects that influence the experience of athletes with disabilities in sporting events, and their identification provides valuable implications for both research and practice in the field of adapted sport.

The "*Facilities*" dimension emerged as a crucial factor in the perception of athletes with disabilities about sporting events. This dimension, composed of four items related to the accessibility of Facilities, accesses, changing rooms and equipment. These findings are in line with recent studies that have highlighted the importance of physical accessibility in the sports participation of people with disabilities. For example, Darcy et al. (2020) found that architectural barriers and the lack of adaptation of sports facilities are determining factors in the sports participation of people with disabilities. The findings of this study reinforce this idea, underlining that aspects related to physical Facilities are fundamental for effective inclusion in sporting events.

It should be noted that, in the present study, the items related to the Facilities obtained relatively high average ratings, which suggests a generally positive perception of the accessibility of the Facilities in the sporting event analyzed. However, these results contrast with the findings of Brown and Pappous (2018), who identified persistent physical barriers in sports facilities, even after major Paralympic events. This discrepancy could be explained by differences in the specific contexts of the event analysed or by advances in the adaptation of infrastructures and inclusive awareness in recent years. The high factor load of the items related to access to sports infrastructures and the Facilities where the event takes place underlines the critical importance of these aspects in the overall experience of athletes. These results are in line with the work of Kiuppis (2018), who argued that physical accessibility is a fundamental requirement for effective participation in adapted sport. The findings of this study reinforce the need to continue improving the accessibility of sports Facilities, not only in terms of regulatory compliance, but also considering the specific perceptions and needs of athletes with different types of disabilities.

The second dimension identified, called "*Organization*", encompassed aspects related to event personnel, transportation and the information provided. The observation of this dimension underlines the importance of organizational and human aspects in the experience of athletes with disabilities in sporting events. The results of our study reveal that athletes particularly value the organization's problem-solving skills and the resources available to support staff. These findings are in line with the study by Cottingham et al. (2017), who emphasized the importance of organizational support and staff training in adaptive sporting events. The flexibility and adaptability of sports organisations have proven to be essential. Urbański et al. (2022), in their study on the coping strategies of athletes with disabilities during the COVID-19 pandemic, highlighted the importance of organizational support and adaptability. These findings reinforce the need for sporting events to have flexible organizational structures and trained personnel to respond to the diverse needs of athletes with disabilities. The high valuation of these aspects in our study suggests that event organisers are paying attention to these areas, which is a positive development compared to previous studies that had identified shortcomings in this area (Misener & Darcy, 2014).

However, it is important to note that some aspects within the dimension received low ratings, such as individualized attention and information in different formats. These results are in line with the findings of Shapiro and Pitts (2014), who identified the lack of accessible information as a significant barrier to participation in adaptive sporting events. These findings suggest that, despite advances in other organizational aspects, there are still areas for improvement in terms of personalization of care and diversification of information formats. The importance of this dimension is reinforced by the results of the content analysis of the open responses, where respondents emphasized the need for specialized and well-qualified personnel specialized in disability. This is in line with the findings of Jeanes et al. (2018), who argued that staff and volunteer training is crucial to creating truly inclusive environments in adaptive sport.

In addition, it should be noted that the moderate correlation between the dimensions resulting from our study suggests that the physical and organizational aspects of sporting events do not operate in isolation, but converge mutually in the global perception of inclusion of athletes with disabilities. This result is in line with Bronfenbrenner's ecological model applied to adapted sport by Hutzler and Sherrill (2007), which emphasizes the interaction between different levels of influence on the sports participation of people with disabilities. The interrelationship between these dimensions has important implications for the organization of inclusive sporting events. It suggests that improvements in physical accessibility should be accompanied by advances in organizational aspects and vice versa. For example, a physically accessible space may not be fully inclusive if the staff is not adequately trained to meet the needs of athletes with disabilities. Similarly, a well-prepared organizational team may be limited in effectiveness if the facilities present significant architectural barriers.

The findings of the present study also support the idea that inclusion in adapted sport is a multidimensional concept, as several authors have argued in recent years (Kiuppis, 2018; Darcy et al., 2020). Identifying these two main dimensions provides a useful framework for assessing and improving the inclusiveness of sporting events, addressing both tangible (physical Facilities) and intangible (organisation and staff) aspects. Likewise, recent research has adopted more holistic approaches to understand the sports participation of people with disabilities. Boucher et al. (2023) employed a socio-ecological framework to examine barriers and facilitators in physical activity and adaptive sport. Their study reveals that these factors operate at multiple levels: individual, interpersonal, community and public policy. This multidimensional perspective reinforces our results, underlining that inclusion in sporting events does not depend solely on physical accessibility, but also on broader organisational and social aspects. The identification of these interconnected levels underscores the complexity of creating truly inclusive sports environments and the need for coordinated interventions in various areas to foster the effective participation of athletes with disabilities. Similar to our study, in an educational context, authors such as Okkenhaug et al. (2024) conducted a systematic review on barriers and facilitators to the practice of physical activity in children and young people with autism, identifying issues such as teacher training and social attitudes. These factors are in agreement with the dimensions found in our research, suggesting that barriers and facilitators for inclusion in sport are consistent in various contexts.

In terms of practical implications, these findings underscore the need to take a holistic approach that addresses both physical accessibility and organizational aspects. Event organisers should pay particular attention to the accessibility of

Facilities, including not only competition areas, but also entrances, changing rooms and common areas. At the same time, investment must be made in the training of staff and volunteers, ensuring that they are prepared to meet the diverse needs of athletes with disabilities. On the other hand, it would be interesting if the design of curricula related to physical activity and sport incorporate issues related to inclusion, especially in the field of sports management, where professionals in charge of planning and managing sport have knowledge related to this sector (Misener & Darcy, 2014). The organisation of fully inclusive sporting events could have recurring implications in the localities where these events are held. Works such as that of Kim et al. (2024) examined the Paralympic legacy and its impact on locality development, highlighting how inclusion networks created during sporting events can have lasting effects on society. Therefore, the development of the dimensions that occurred in the celebration of the event not only affects the immediate success of the event, but also its potential to generate long-term social changes.

Likewise, the low valuation of aspects such as individualized attention and information in different formats points to specific areas for improvement. Organisers should consider implementing strategies to personalise care for athletes and diversify information formats to make it more accessible to people with different types of disabilities. This could include the use of assistive technologies, the provision of information in alternative formats (Braille, sign language, easy to read) and the assignment of specific support staff for athletes who require it.

From a research perspective, this study presents some theoretical implications and opens new lines, presenting a multidimensional and valid instrument to assess the degree of inclusion of sporting events. Future studies could explore how perceptions of these dimensions vary among athletes with different types of disabilities. In addition, it would be valuable to investigate how these dimensions relate to other relevant constructs, such as athlete satisfaction, intention to participate in future events, or sports performance. In addition, it is interesting to investigate how these inclusive practices can extend beyond the sports field and positively influence other areas of society. Another promising area for future research is the longitudinal study of how athletes' perceptions change over time, especially in relation to the improvements implemented in the accessibility and organization of events. This would provide valuable insights into the effectiveness of interventions and allow for a more dynamic approach in understanding inclusion in adaptive sport.

Finally, it is important to recognize the limitations of this study. First, the sample, although diverse, was mainly composed of visually impaired athletes, which could have influenced the results. Future studies should seek a more balanced representation of different types of disability to increase the generalizability of the findings. In addition, the collection of the sample was carried out in a specific event of popular races, although the object of the research was not focused on specifically analyzing the accessibility of this sporting event. Therefore, future research could benefit from using a comparative approach that examines the perceptions of athletes with disabilities in various types of events and sports disciplines, considering the specific accessibility characteristics of these events. In addition, the non-probability sampling used may introduce potential biases. Therefore, caution is advised when extrapolating these results to wider populations of athletes with disabilities. Future studies with a larger sample number and stratified by type of disability could favor the generalization of these results.

Conclusions

People with disabilities are a large and heterogeneous group within society. That is why it is important to organize sporting events accessible to this group, and the training of those responsible for the activities to be able to serve this population by successfully responding to the needs they may present.

This study provides empirical evidence on the importance of two key dimensions in the perception of inclusion of athletes with disabilities in sporting events: "Areas" and "Organization". These findings contribute to the theoretical understanding of inclusion in adapted sport and offer practical guidance for the organisation of more inclusive sporting events.

The interrelationship between these dimensions underscores the need for an inclusive approach in the planning and execution of adaptive sporting events. Improving the physical accessibility of Facilities is crucial, but it must be accompanied by an equally dedicated attention to organisational aspects, including staff training, the provision of accessible information and individualised attention to the needs of athletes.

These results represent an important step towards creating truly inclusive sporting events, where athletes with disabilities can participate on equal terms and fully enjoy the sporting experience. However, the multifaceted nature of inclusion in sporting events needs to be highlighted, ranging from specific event-level practices to broader policy and leadership considerations. By addressing both the physical and organisational aspects, sporting events can become catalysts for greater inclusion and participation of people with disabilities in sport and, by extension, in society at large.

It is recommended that organisers of sporting events take a multi-faceted approach to improving inclusion. This involves not only ensuring the physical accessibility of all Facilities, including competition areas, changing rooms and common areas,

but also implementing comprehensive training programmes for staff and volunteers. It is crucial to establish individualized attention systems that respond to the specific needs of each participant, as well as to provide information in multiple accessible formats, including extended text, easy reading, braille, audio, and digital formats. The incorporation of assistive technologies into the event's digital platforms and the implementation of a continuous feedback system are also key elements to constantly improve the accessibility and inclusion of the event. Finally, it is important to recognize that creating inclusive sporting events is an ongoing process that requires a long-term commitment. By encouraging greater inclusion in sporting events, you not only improve the experience of athletes with disabilities, but also contribute to building a more equitable and accessible society for all.

Ethics Committee Statement

The study was performed following the Declaration of Helsinki and was approved by the Ethics Committee Committee: Catholic University of Valencia (registration code UCV/2021-2022/213, November 07, 2022).

Conflict of Interest Statement

In this section the authors should declare that the entities participating in the study had no influence on the design of the study, the analysis of the data, or the interpretation of the results.

Funding

This research did not receive funding.

Authors' Contribution

"Conceptualization P.M-S. & R.J.G-G.; Methodology M.H. G-S; Software R.J.G-G.; Validation M.H. G-S. & R.J.G-G.; Formal Analysis P.M-S.; Investigation C.P-C.; Data Curation P.M-S.& C.P-C.; Writing – Original Draft P.M-S.; Writing – Review & Editing M.H. G-S. & R.J.G-G.; Visualization M.H. G-S; Supervision C.P-C. All authors have read and agreed to the published version of the manuscript.

Data Availability Statement

Data available upon request to the correspondence author (m.huertas.gonzalez@uv.es).

References

Badia, M., Orgaz, B. M., Verdugo, M. A., Ullán, A. M., & Martínez, M. M. (2011). Personal factors and perceived barriers to participation in leisure activities for young and adults with developmental disabilities. *Research in Developmental Disabilities, 32*(6), 2055–2063. https://doi.org/10.1016/j.ridd.2011.08.007

Ballas, J., Buultjens, M., Murphy, G., & Jackson, M. (2022). Elite-level athletes with physical impairments: Barriers and facilitators to sport participation. *Disability & Society, 37*(6), 1018–1037. https://doi.org/10.1080/09687599.2020.1862642

Boucher, T. Q., McIntyre, C. L., & Iarocci, G. (2023). Facilitators and barriers to physical activity involvement as described by autistic youth with mild intellectual disability. *Advances in Neurodevelopmental Disorders, 7*(4), 512–524. https://doi.org/10.1007/s41252-022-00310-5

Brown, C., & Pappous, A. (2018). "The legacy element… it just felt more woolly": Exploring the reasons for the decline in people with disabilities' sport participation in England 5 years after the London 2012 Paralympic Games. *Journal of Sport and Social Issues, 42*(5), 343–368. https://doi.org/10.1177/0193723518781237

Brown, C., & Pappous, A. (2020). Are mega-events a solution to address physical inactivity? Interrogating the London 2012 Paralympic sport participation legacies among people with disabilities. *European Journal for Sport and Society, 18*, 18–43. https://doi.org/10.1080/16138171.2020.1792112

Carroll, P., Witten, K., & Duff, C. (2020). "How can we make it work for you?" Enabling sporting assemblages for disabled young people. *Social Science & Medicine, 113*, Article 113213. https://doi.org/10.1016/j.socscimed.2020.113213

Cottingham, M., Vineyard, A., Velasco, F., & Asias, B. (2017). Meeting expenses of wheelchair rugby: Strategies employed to procure funding and promotion by teams and players. *Palaestra, 31*(1), 16–22.

Cunningham, G. B. (2019). *Diversity and inclusion in sport organizations: A multilevel perspective* (3rd ed.). Routledge.

Darcy, S., Ollerton, J., & Faulkner, S. (2020). "Why can't I play?": Transdisciplinary learnings for children with disability's sport participation. *Social Inclusion, 8*(3), 209–223. https://doi.org/10.17645/si.v8i3.2750

Desbordes, M., & Falgoux, J. (2006). *Gestión y organización de un evento deportivo* (Vol. 609). Inde.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*(4), 1149–1160. https://doi.org/10.3758/BRM.41.4.1149

Glebova, E., Gerke, A., & Book, R. (2023). The transformational role of technology in sports events. In *Sports management in an uncertain environment* (pp. 169–187). Springer Nature Singapore. https://doi.org/10.1007/978-981-19-7268-3_10

Grills, N., Singh, L., Pant, H., Varghese, J., Murthy, G. V. S., Hoq, M., & Marella, M. (2017). Access to services and barriers faced by people with disabilities: A quantitative survey. *Disability, CBR & Inclusive Development, 28*(2), 23–38. https://doi.org/10.5463/dcid.v28i2.615

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). Prentice Hall.

Hammel, J., Magasi, S., Heinemann, A., Gray, D., Stark, S., Kisala, P., Carlozzi, N., Tulsky, D., Garcia, S., & Hahn, E. (2015). Environmental barriers and supports to everyday participation: A qualitative insider perspective from people with disabilities. *Archives of Physical Medicine and Rehabilitation, 96*(4), 578–588. https://doi.org/10.1016/j.apmr.2014.12.008

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Hernández, R., Quiñonez, J. A., Arenas, J., Urrea, A. M., Barbosa-Granados, S., & Loaiza, H. H. A. (2021). Características psicológicas en deportistas con discapacidad física. *Retos, 40*(40), 351–358. https://doi.org/10.47197/retos.v40i40.83079

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*, 1–55. https://doi.org/10.1080/10705519909540118

Hutzler, Y., & Sherrill, C. (2007). Defining adapted physical activity: International perspectives. *Adapted Physical Activity Quarterly, 24*(1), 1–20. https://doi.org/10.1123/apaq.24.1.1

Ives, B., Clayton, B., Brittain, I., & Mackintosh, C. (2019). 'I'll always find a perfectly justified reason for not doing it': Challenges for disability sport and physical activity in the United Kingdom. *Sport in Society, 24*(5), 588–606. https://doi.org/10.1080/17430437.2019.1703683.

Jaarsma, E. A., Dijkstra, P. U., Geertzen, J. H. B., & Dekker, R. (2014). Barriers to and facilitators of sports participation for people with physical disabilities: A systematic review. *Scandinavian Journal of Medicine & Science in Sports, 24*(6), 871–881. https://doi.org/10.1111/sms.12272.

Jeanes, R., Spaaij, R., Magee, J., Farquharson, K., Gorman, S., & Lusher, D. (2018). 'Yes we are inclusive': Examining provision for young people with disabilities in community sport clubs. *Sport Management Review, 21*(1), 38–50. https://doi.org/10.1016/j.smr.2017.04.001

Jiménez, L. E. C., & Cárdenas, A. I. G. (2020). Validity and reliability of the scale of physical activity for disabled adults PASIPD-C. *Retos, 41*(41), 162–170. https://doi.org/10.47197/retos.v0i41.77430

Kamberidou, I., Bonias, A., & Patsantaras, N. (2019). Sport as a means of inclusion and integration for "those of us with disabilities". *European Journal of Physical Education and Sport Science, 5*(1), 1–13. https://doi.org/10.46827/ejpe.v0i0.2658

Kaplanidou, K. (2012). The importance of legacy outcomes for Olympic Games four summer host cities residents' quality of life: 1996–2008. *European Sport Management Quarterly, 12*(4), 397–433. https://doi.org/10.1080/16184742.2012.693118

Kim, H., Lee, C., Kim, K. T., & Kim, J. (2024). Paralympic legacy as seen through the lenses of spectators with physical disabilities: A case of the PyeongChang Paralympic Games. *Annals of Leisure Research, 27*(2), 293–312. https://doi.org/10.1080/11745398.2022.2132521

Kiuppis, F. (2018). Inclusion in sport: Disability and participation. *Sport in Society, 21*(1), 4–21. https://doi.org/10.1080/17430437.2016.1225882

Kızar, O., Demir, G. T., & Genç, H. (2021). Examination of the effect of national and amateur disabled athletes' disability types on sports participation motivation. *European Journal of Physical Education and Sport Science, 6*(12), 1–16. https://doi.org/10.46827/ejpe.v6i12.3655

Klenk, C., Blaise, M., & Schluchter, T. (2023). Social participation of children with intellectual disabilities in inclusive sport: Practical implications for physical education. *Current Issues in Sport Science (CISS), 2023*(2). https://doi.org/10.36950/2023.2ciss048

Kline, T. J. (2005). *Psychological testing: A practical approach to design and evaluation*. Sage Publications.

McConkey, R., Pochstein, F., Carlin, L., & Menke, S. (2019). Promoting the social inclusion of players with intellectual disabilities: An assessment tool for sport coaches. *Sport in Society, 24*(3), 430–439. https://doi.org/10.1080/17430437.2019.1673369

McLoughlin, G., Fecske, C. W., Castaneda, Y., Gwin, C., & Graber, K. (2017). Sport participation for elite athletes with physical disabilities: Motivations, barriers, and facilitators. *Adapted Physical Activity Quarterly, 34*(4), 421–441. https://doi.org/10.1123/apaq.2016-0127

Misener, L., & Darcy, S. (2014). Managing disability sport: From athletes with disabilities to inclusive organisational perspectives. *Sport Management Review, 17*(1), 1–7. https://doi.org/10.1016/j.smr.2013.12.003

Moran, T., & Block, M. (2010). Barriers to participation of children with disabilities in youth sports. *Teaching Exceptional Children-Plus, 6*(3), Article 5.

Mulligan, H. F., Hale, L. A., Whitehead, L., & Baxter, G. D. (2012). Barriers to physical activity for people with long-term neurological conditions: A review study. *Adapted Physical Activity Quarterly, 29*(3), 243–265. https://doi.org/10.1123/apaq.29.3.243

Okkenhaug, I., Jensen, M. R., & Solhaug, S. (2024). Barriers and facilitators for physical activity among children and youth with autism—A scoping review. *Journal of Physical Activity and Health, 21*(5), 965–979. https://doi.org/10.1123/jpah.2024-0075

Patatas, J. M., De Bosscher, V., Derom, I., & Winckler, C. (2023). Stakeholders' perceptions of athletic career pathways in Paralympic sport: From participation to excellence. *Sport in Society, 25*(2), 299–320. https://doi.org/10.1080/17430437.2020.1789104

Pérez-Tejero, J., Blasco-Yago, M., González-Lázaro, J., García-Hernández, J. J., Soto-Rey, J., & Coterón, J. (2013). Paraciclismo: Estudio sobre los procesos de integración a nivel internacional. *Apunts Educación Física y Deportes, (111)*, 79–86. https://doi.org/10.5672/apunts.2014-0983.es.(2013/1).111.08

Piñeiro-Naval, V. (2020). The content analysis methodology: Uses and applications in communication research on Spanish-speaking countries. *Communication & Society, 33*(3), 1–15. https://doi.org/10.15581/003.33.3.1-15

Reina, R. (2010). *La actividad física y deporte adaptado ante el Espacio Europeo de Enseñanza Superior*. Wanceulen.

Rimmer, J., & Marques, A. (2012). Physical activity for people with disabilities. *The Lancet, 380*(9838), 193–195. https://doi.org/10.1016/S0140-6736(12)61028-9

Ringle, C. M., da Silva, D., & Bido, D. (2015). Structural equation modeling with the SmartPLS. *Brazilian Journal of Marketing, 13*(2), 1–18. https://doi.org/10.5585/remark.v13i2.2717

Riffi Acharki, E., Spaaij, R., & Nieuwelink, H. (2023). Social inclusion through sport? Pedagogical perspectives of Dutch youth sport coaches. *Sport, Education and Society, 28*(2), 144–158. https://doi.org/10.1080/13573322.2021.2006174

Román, M., García-Matador, J., Fuentes-García, J. P., & Jiménez-Castuera, R. (2017). Análisis de variables motivacionales y de estilos de vida saludables en practicantes de ejercicio físico en centros deportivos en función del género. *Retos. Nuevas Tendencias en Educación Física, Deporte y Recreación*, (34), 166–171. https://doi.org/10.47197/RETOS.V0I34.58281

Roult, R., Brunet, I., Belley-Ranger, É., Carbonneau, H., & Fortier, J. (2015). Inclusive sporting events in schools for youth with disabilities in Quebec. *SAGE Open, 5*(3). https://doi.org/10.1177/2158244015604696

Segura, J., Martínez-Ferrer, J. O., Guerra, M., & Barnet, S. (2013). Creencias sobre la inclusión social y el deporte adaptado de deportistas, técnicos y gestores de federaciones deportivas de deportes para personas con discapacidad. *Revista Iberoamericana de Psicología del Ejercicio y del Deporte*, 8(1), 120–144. https://accedacris.ulpgc.es/handle/10553/10903AccedaCRIS

Shapiro, D. R., & Pitts, B. G. (2014). What little do we know: Content analysis of disability sport in sport management literature. *Journal of Sport Management*, 28(6), 657–671. https://doi.org/10.1123/JSM.2013-0258Human Kinetics Journals+1ResearchGate+1

Shields, N., & Synnot, A. J. (2014). An exploratory study of how sports and recreation industry personnel perceive the barriers and facilitators of physical activity in children with disability. *Disability and Rehabilitation*, 36(24), 2080–2084. https://doi.org/10.3109/09638288.2014.887796

Sanmartín, M.G., & Pertegaz, N.C. (2006). Análisis de los motivos para la participación en actividades físicas de personas con y sin discapacidad. *Ricyde. Revista Internacional De Ciencias Del Deporte, 2*, 49-64.

Štangová, E., Levicka, J., Ochabova, E., & Vacekova, M. (2022). The benefit of sport for people with disabilities. *Clinical Social Work and Health Intervention*, 13(5), 53–60. https://doi.org/10.22359/cswhi_13_5_11

Urbański, P. K., Rogoza, R., Brewer, B., & Tasiemski, T. (2022). Coping with the COVID-19 pandemic by Paralympic athletes preparing for elite sport events: A longitudinal study. *Scandinavian Journal of Medicine & Science in Sports*, 33(4), 512–520. https://doi.org/10.1111/sms.14270

Valet, A. (2018). About inclusive participation in sport: Cultural desirability and technical obstacles. *Sport in Society*, 21(1), 137–151. https://doi.org/10.1080/17430437.2016.1225920

Van der Veken, K., Lauwerier, E., & Willems, S. (2020). "To mean something to someone": Sport-for-development as a lever for social inclusion. *International Journal for Equity in Health*, 19, Article 11. https://doi.org/10.1186/s12939-019-1119-7BioMed Central+1PMC+1

Vieira, Y. V., Colere, J., & de Souza, D. L. (2021). Facilitadores e barreiras para a prática esportiva por parte de atletas com comprometimentos no Brasil. *Retos*, 41, 812–822. https://doi.org/10.47197/retos.v41i0.85497