

Research Article

Wheelchair Male Basketball as A Springboard for Psychological Well-Being: A Qualitative Study

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Background

Sports can be considered an element that significantly improves psychological and physical well-being, enhancing individual abilities, especially in people with disabilities.

Objective

This research aims to explore the impact of wheelchair basketball on the psychological well-being of players with physical disabilities. It analyzes aspects such as self-esteem, quality of life, and coping strategies to understand how this sport influences self-perception and promotes the well-being of athletes with motor disabilities.

Methods

This qualitative study was conducted from February to April 2024. The sample consisted of 18 male participants aged 21–46 years (mean age = 35.89, standard deviation = 7.03) who are active players in the National Serie B Championship of wheelchair basketball. Data were collected through semi-structured interviews, which were recorded, transcribed, and analyzed using thematic analysis guidelines. Descriptive statistics were used to present participant demographics, including education level and type of disability.

Results

The results revealed that regular practice of wheelchair basketball produced positive psychological effects. This sport is confirmed to be an effective tool for improving the psychological and physical well-being of people with disabilities, highlighting the complexity of individual experiences.

Conclusion

The research highlights the importance of considering the multifaceted nature of individual experiences, suggesting that sports, such as wheelchair basketball, can play a crucial role in promoting overall well-being. Future interventions should focus on exploring these benefits further and expanding access to such activities for people with disabilities.

1. INTRODUCTION

Sports influence physical, psychological, and social growth, allowing individuals to better understand their bodies, potential, and limits. It offers an opportunity for education and growth, enabling significant inner well-being. Well-being is a multidimensional state encompassing physical health, psychological balance, and social integration. For

athletes, well-being refers to the experience of vitality, autonomy, and satisfaction derived from training, competition, and belonging to a team. In the case of athletes with disabilities, well-being also includes aspects related to self-determination, the redefinition of identity, the sense of empowerment, and the ability to challenge societal stereotypes through sports participation. Sports and physical activity are important tools for improving mental health,

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especially for people suffering from chronic illnesses and disabilities in their daily lives.¹ It has been demonstrated that such activities positively impact many populations with neurological disabilities.² In this regard, the United Nations Convention on the Rights of Persons with Disabilities (Article 30: Participation in cultural life, recreation, leisure, and sport, 2022) clearly emphasizes the importance of participating in sports activities both at recreational and professional levels. Participation in recreational and competitive sports at a young age improves growth and promotes the development of healthy lifestyles throughout life; it also enhances social support, physical fitness, enjoyment, and a sense of independence.³ Various research fields have defined and recognized the complexity of the relationship between sport practice and motor disability. This has led to a new interpretation of sports, which now aims to integrate socio-inclusive and educational dimensions. Compared to non-disabled athletes, athletes with disabilities and para-athletes are subject to discrimination, retaliation, stigmatization, humiliation, and economic-financial barriers.^{4,5} For disabled individuals, training the body in motion allows the exploration of new communicative channels that go beyond verbal cues, involving the entire bodily dimension of the individual. The main components that contribute to the performance of “wheelchair sports” are the athlete and the chair; their interaction enables the propulsion of the wheelchair and the movements of the individual within a given sport. Sports and physical exercise have been shown to significantly impact a range of para-sports, such as para-swimming and wheelchair sports.⁶⁻⁹ Developed at the end of World War II as a means of rehabilitation for an injured soldier, wheelchair basketball has been considered one of the most popular adaptive sports since its inception.¹⁰ Today, wheelchair basketball athletes have different disabilities: spinal cord injuries, cerebral palsy, poliomyelitis, spina bifida, and lower limb deficiencies caused by diseases or amputations. The classification of a player in wheelchair basketball aims to ensure that all eligible players have the same rights and opportunities to be an integral part of the team. In fact, the functional classification system used by Strohkendl is still considered a “satisfactory” method by participants for comparing these athletes and assigning them to competition classes. Wheelchair basketball helps to combat stereotypes about disability and sports by highlighting empowerment as a result of sports.^{11,12} A study by Wolf *et al.*¹³ discovered that athletes, perceiving a sense of cohesion within their team, felt more accepted by their teammates and consequently perceived greater social support. Wheelchair basketball enables improved levels of concentration and awareness, enhancing the ability to manage stress, sleep quality, and heart rate variability control.^{13,14} All these factors contribute to the overall psychological well-being of athletes, fostering a greater sense of agency, purpose, and resilience in the face of personal and social challenges. It can significantly affect the quality of life of athletes, who may build their social networks around the sport.¹² This research investigates the possible relationship between the practice of wheelchair basketball and the psychological well-being of players with disabilities. Across a qualitative study, it examines how the practice of wheelchair basketball can help players develop effective strategies to face daily challenges related to disability. This includes stress management, increased self-confidence, and the ability to overcome physical and psychological obstacles. Across an in-depth analysis of the collected data, this research aims to provide a clearer understanding of the

psychological benefits of wheelchair basketball from the athletes’ point of view. In this way, the results can be used to formulate targeted intervention practices and strategies aimed at improving the well-being of athletes with motor disabilities through the promotion of sports practice.

2. METHODS

This qualitative research was conducted between February and April 2024 in collaboration with the Psychology Unit, Department of Educational Sciences, University of Catania, and the wheelchair basketball team of the University Sports Center (CUS) of Catania. The methodology employed allows an understanding of the reasons, opinions, and motivations of the participants, aiming to investigate how wheelchair basketball practice can positively influence the psychological aspects of disabled athletes. It is hypothesized that wheelchair basketball, viewed as a tool for social inclusion and individual development, positively affects psychological well-being, promoting increased self-esteem and a better self-perception. Based on these research questions (Table 1), more detailed questions were developed, formalized, and integrated into a semi-structured interview format (Table 2).

Participation in the qualitative research was voluntary and based on informed consent, ensuring maximum data confidentiality. Before proceeding with the interviews, an adequate explanation of the study’s purpose and potential benefits was provided to ensure a clear and informed understanding by the participants. Subsequently, participants were asked for authorization to record the interview, ensuring that the recording was intended exclusively for transcription and analysis. During the individual interaction, participants were encouraged to respond honestly and comprehensively to the questions and freely share their emotions, experiences, and reflections. The subjects involved in our study are athletes with disabilities who actively participate in the National Serie B Championship of wheelchair basketball, representing the CUS Catania team. The sample consists of 18 Caucasian males, aged between 21 and 46 years (mean age = 35.89, standard deviation = 7.03) with various personal and physical characteristics that may influence their athletic performance and participation in the competition (Table 3).

Furthermore, the sample can be divided into two groups: subjects who depend on the daily use of a wheelchair due to mobility limitations ($n = 12$; 66.67%), and individuals who use a wheelchair exclusively in sports contexts ($n = 6$; 33.33%).

For the analysis of the collected data, thematic analysis was chosen, a qualitative methodology for exploring the significant emerging categories and themes. Braun and Clarke¹⁵ contributed to the development of thematic

Table 1. Research questions

No.	Research questions
1.	How much does practicing wheelchair basketball influence the psychological well-being of people with disabilities?
2.	How can participation in wheelchair basketball increase self-esteem and self-perception in individuals with disabilities?
3.	How effectively does wheelchair basketball enable individuals with disabilities to develop coping mechanisms to face challenges related to disability?

Table 2. Semi-structured interview

No.	Questions
1.	How did you start playing wheelchair basketball, and what were your initial thoughts or emotions when you began?
2.	Have you noticed changes in your psychological well-being over time, thanks to this sport?
3.	Have you had experiences during wheelchair basketball that brought you moments of particular satisfaction or joy?
4.	How has your mental health been affected by interacting with your teammates?
5.	Have you noticed an increased ability to handle stress thanks to playing wheelchair basketball?
6.	How has your self-esteem changed since you started playing this sport?
7.	Can you describe a particular incident related to wheelchair basketball that improved your self-esteem?
8.	Have you noticed increased self-confidence in situations outside of the sporting context due to your participation in this sport?
9.	How do the coping mechanisms you learned in the sporting context reflect in your daily activities?
10.	Can you talk about instances where this sport has helped you cope with challenges associated with your disability?

Table 3. Participants' characteristics

Characteristics	n (%)
Gender	
Male	18 (100)
Level of education	
Middle school	2 (11.11)
High school	13 (72.22)
University	3 (16.67)
Type of disability	
Paraplegia	8 (44.44)
Multiple sclerosis	1 (5.56)
Lower limb amputation	2 (11.11)
Prosthesis	2 (11.11)
Lower limb motor disability	4 (22.22)
Polyomyelitis	1 (5.56)

analysis, describing it as a flexible process that allows researchers to explore the underlying meanings in the data through several key phases:

- (i) Familiarization: Researchers immersed themselves in the data to understand its content and identify the primary units of meaning
- (ii) Generating codes: Significant parts of the data were labeled or coded based on emerging concepts or topics, and the data were organized and prepared for subsequent analysis
- (iii) Initial theme generation: The main emerging themes were identified by grouping similar codes into broader categories to reveal patterns and trends in the data
- (iv) Reviewing themes: The initial themes were reviewed and refined to ensure coherence and alignment with the collected data, ensuring they accurately reflect the underlying concepts
- (v) Defining and naming themes: Themes were clearly and distinctively defined, with names that reflect their

content and relevance, establishing a clear structure for the analysis

- (vi) Producing the report: A final report was drafted focusing on the key themes that correspond to the research questions, including significant excerpts from the data to clarify the meaning of the identified themes, highlighting their implications and connections to existing literature (Table 4).¹⁵

3. RESULTS AND DISCUSSION

The study showed that nearly all participants (17 out of 18) experienced a significant improvement in psychological well-being due to regular sports practice. This improvement reflects a multidimensional well-being enhancement involving emotional stability and increased motivation, a stronger sense of autonomy, and improved self-perception. This improvement was mainly attributed to positive social interactions with teammates, which created a supportive and cohesive environment. Only one athlete, also involved in Paralympic swimming, did not notice significant changes, possibly because they were already accustomed to the beneficial effects of sports. Most participants (13 out of 18) reported increased self-esteem, although one experienced fluctuations related to sports performance and four maintained stable levels. This highlights how self-esteem can be influenced by performance and social dynamics. Regarding self-confidence, 16 participants reported an increase, attributed to individual or team successes. Two, with already high initial confidence, did not notice changes, indicating that the impact of sports on confidence varies depending on the starting level. Stress management improved for 15 participants, while one, already used to maintaining moderate stress levels, did not notice benefits. Two participants maintained stable stress management abilities. Participants frequently linked this progress to the routine of training, goal-oriented activities, and the supportive group setting, which collectively facilitated emotional regulation and stress coping. From a physical standpoint, 13 participants reported significant benefits, such as increased muscle strength and improved overall well-being. Four participants experienced both physical and psychological advantages. One participant with multiple sclerosis did not see significant physical improvements, highlighting the importance of considering individual health conditions. Finally, 10 participants improved their ability to cope with disability-related challenges attributed to wheelchair basketball. Four did not report progress, and one, with multiple sclerosis, lamented the lack of connection with others affected by the same condition, feeling less supported as a result. Four participants never perceived their disability as an obstacle, reflecting the diversity of individual experiences. In summary, the study highlights how sports and positive social relationships can enhance athletes' psychological well-being, self-esteem, self-confidence, stress management, and physical abilities, considering the diverse individual experiences.

This study, conducted with 18 participants with various disabilities, explored the relationship between wheelchair basketball and psychological well-being through a qualitative approach. As reported in the Healthy People 2010 guidelines, for young people with disabilities, participating in national and international sports programs promotes a sense of inclusion by improving personal self-esteem as sports practices are intended not only as physical or motor exercises to improve

Table 4. Research questions, themes, and codes

Research questions	Themes	Codes
Impact of wheelchair basketball on the psychological well-being of athletes with disabilities	Stable or enhanced psychological effects due to wheelchair basketball	<ul style="list-style-type: none"> • Influence of social interaction • Meaning of the sport for the patient • Potential evolution of psychological well-being
Contribution of wheelchair basketball to increasing self-esteem and self-perception in individuals with disabilities	Increase/stability of self-confidence and self-esteem due to the sporting context	Personal achievement satisfaction
Role of wheelchair basketball in developing coping skills for athletes with disabilities	Adaptation strategies	<ul style="list-style-type: none"> • Stress management skills • Potential psycho-physical benefits • Ability to cope with disability-related challenges

physical well-being but also help to improve the mind and brain and to develop greater socio-relational skills.¹⁶ In this regard, the results of the study highlighted three main themes, revealing that most participants reported significant improvements in emotional and behavioral well-being. These changes were primarily attributed to interpersonal relationships within the team, supporting Deci and Ryan's self-determination theory, which emphasizes the importance of autonomy, competence, and relatedness for psychological well-being. An interesting aspect that emerged is that the positive effect of sports can vary depending on the athlete's prior experience, as in the case of a participant already involved in other Paralympic sports. Furthermore, most participants reported increased self-esteem and self-confidence, mainly related to individual or team successes, which is in line with Crocker and Wolfe's social self-esteem theory. Regarding stress management, sports practice contributed positively for most participants, although some maintained stable stress levels. Thus, a precise relationship exists between improving mental health and wheelchair basketball. Our research confirms the hypotheses of various studies that hypothesize that various emotional, social, and motivational factors associated with sports activity can help cope with difficult situations, increase self-acceptance and self-esteem, and even achieve ambitious goals.^{6-7,17} Wheelchair basketball ensures greater inclusion for people with disabilities, as it allows athletes with different levels of disability and players with different physical abilities to come together, characterizing this sport with a high degree of solidarity and teamwork. It represents an example of sports integration, an opportunity for disabled individuals to participate in a highly inclusive and educational context. Participating in adaptive sports activities allows for stronger, meaningful bonds and relationships among peers, with higher social connections compared to disabled individuals who do not practice any inclusive sports.¹⁸ Therefore, the sense of belonging and community that develops through involvement in this sports practice can reduce the social isolation of disabled individuals, improving overall well-being. Wheelchair basketball is a powerful means of achieving the psychological benefits for disabled individuals. It finds its satisfaction in the concrete possibility that every person with a disability must experience physical activity. It is an opportunity to showcase one's abilities and skills and discover facets of one's personality. It offers a vital escape and a way to face personal challenges. The majority reported physical improvements, positively influencing the ability to face daily challenges. However, individual experience can influence the perception of benefits, as in the case of a participant with multiple sclerosis who experienced daily variations in physical functionality.

In summary, the study confirms the importance of wheelchair basketball in improving the psychological and physical

well-being of people with disabilities, highlighting the complexity of individual experiences and the need to consider various factors when evaluating the effects of sports. However, the study has some limitations. The small sample size may not represent the broader population, and the lack of diversity, as all participants are part of the same team, may limit the variety of experiences collected. In addition, the presence of the researcher during the interviews may have influenced the participants' responses. Finally, unconsidered variables, such as social and family support and activities outside the sports context, may have influenced the results.

4. CONCLUSION

Our study provided a comprehensive analysis of the impact of participating in wheelchair basketball on the psychological well-being, self-esteem, and coping strategies of athletes with disabilities. Across a detailed investigation, we clearly demonstrated how regular practice of this sport can generate significant benefits for the mental health and self-perception of the participants. Although a small portion of the sample did not report significant improvements, data analysis still highlighted a notable increase in the perception of psychological well-being. A particularly noteworthy aspect is the diversity of individual experiences within our study, which highlighted the importance of considering various factors in planning interventions and programs to promote inclusion through sports. This underscores the need to create inclusive sports environments and provide adequate social support to maximize benefits for athletes with disabilities. Furthermore, our findings significantly contribute to understanding the importance of wheelchair basketball as a tool for improving the psychological and physical well-being of people with disabilities. We hope this research can be the starting point for designing future interventions and programs to promote social inclusion and improve the quality of life through sports practice. Finally, we hope our findings can inspire the creation of new innovative initiatives in active sports and social inclusion. This could include the development of specific psychological support programs for athletes with disabilities, the implementation of educational initiatives to raise awareness about the potential of adaptive sports, and the creation of support networks among athletes with similar experiences.

The study has noteworthy limitations. First, the lack of diversity in the sample, with all participants from the same team (CUS Catania), may have restricted the range of experiences and perspectives gathered. This homogeneity could potentially limit the generalizability of the findings to broader populations of wheelchair basketball athletes. In addition, the gender imbalance in the study, which included only male participants, further constrains the applicability of the results to female athletes with disabilities. This limitation

highlights the need for future research to incorporate a more diverse gender representation. Finally, the study did not account for various external factors, such as social and family support or activities outside the sports context. These uncontrolled variables could have significantly influenced the participants' psychological well-being and overall experiences, potentially confounding the results attributed to wheelchair basketball participation. Future research in this area should aim to address these limitations to provide a more comprehensive and widely applicable understanding of the impact of wheelchair basketball on athletes with disabilities.

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CONFLICT OF INTEREST

As the Editor-in-Chief of this journal, Pasquale Caponnetto was not involved in the editorial and peer-review process conducted for this paper. Separately, other authors declared that they have no known competing financial interests or personal relationships that could have influenced the work reported in this paper.

AUTHOR CONTRIBUTIONS

Conceptualization: Pasquale Caponnetto, Abdalnaser Fakhrou

Data curation: All authors

Investigation: All authors

Methodology: All authors

Project administration: All authors

Writing – original draft: All authors

Writing – review & editing: All authors

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study was approved by the Psychology Unit, Department of Educational Sciences, University of Catania's ethics committee (03-2024). Participants provided written informed consent before participation in the study. To ensure data protection and participant confidentiality, all data were collected and stored in compliance with the European Union's General Data Protection Regulation (GDPR).

CONSENT FOR PUBLICATION

All participants provided informed consent for their anonymized data to be used in publications derived from this research.

DATA AVAILABILITY STATEMENT

All data supporting the findings of this study are available from the corresponding author upon reasonable request.

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