










Adaptive Sports and Mental Health: Exploring the Psychological Outcomes of Engaging in Sports for Individuals with Disabilities

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ABSTRACT

Objective: The objective of this study was to explore the psychological outcomes of engaging in adaptive sports for individuals with disabilities.

Methods and Materials: This qualitative study utilized semi-structured interviews with 23 participants ranged from 18 to 55 years, with a mean age of 32 years who are actively involved in adaptive sports. Participants were selected through a purposive sampling technique to ensure a diverse representation in terms of age, gender, type of disability, and sport. Data collection focused on participants' personal experiences with adaptive sports, with an emphasis on psychological impacts. Theoretical saturation was achieved to ensure comprehensive coverage of the experiences. Data were analyzed using thematic analysis to identify main themes and categories within the psychological outcomes of adaptive sports participation.

Findings: The analysis revealed five main themes associated with the psychological outcomes of participating in adaptive sports: Emotional Well-being, Social Integration, Personal Empowerment, Cognitive Outcomes, and Adaptation and Coping. Under Emotional Well-being, participants reported improvements in emotional resilience, self-esteem, joy and fulfillment, and anxiety reduction. Social Integration was characterized by a strengthened sense of belonging, enhanced social support, and improved communication skills. Personal Empowerment was evident through increased autonomy, goal achievement, and personal growth. Cognitive Outcomes included better concentration and focus, as well as enhanced problem-solving skills. Lastly, Adaptation and Coping were observed through the development of effective coping mechanisms, increased resilience, and acceptance of disability.

Conclusion: The study concludes that adaptive sports play a significant role in enhancing the psychological well-being of individuals with disabilities.

Participation in adaptive sports leads to improvements in emotional well-being, social integration, personal empowerment, cognitive functions, and adaptive coping strategies. These findings underscore the importance of promoting and facilitating access to adaptive sports as a means of supporting the mental health and overall quality of life for individuals with disabilities.

Keywords: *Adaptive Sports, Mental Health, Psychological Outcomes, Individuals with Disabilities.*

1. Introduction

The intertwining of sports and mental health, particularly within the realm of adaptive sports for individuals with disabilities, has garnered increasing scholarly attention in recent years. The necessity of understanding these outcomes cannot be overstated, as sports participation emerges as a pivotal aspect of rehabilitation, social integration, and overall mental well-being for people with disabilities (Grasdalsmoen et al., 2022; Milistetd et al., 2021; Özcan, 2022; Taheri et al., 2023). Aitchison et al. (2020) highlight the growing body of evidence supporting the health benefits, both physical and psychological, for individuals with disabilities engaging in sports. Their systematic review protocol underscores the potential of sports participation to significantly enhance the quality of life, echoing the broader consensus that adaptive sports serve as a vital conduit for health promotion and disability rights (Aitchison et al., 2020).

However, the pathway to these benefits is multifaceted, influenced by various factors including family support, the nature of the sport, and the broader social and institutional context. Donohue et al. (2014) provide an insightful exploration into how family-supported approaches can optimize mental health and sport performance concurrently. This study, among others, suggests that the social environment surrounding the athlete plays a critical role in maximizing the psychological benefits of sports participation (Donohue et al., 2014). Identity work, as discussed by Fitzgerald and Kirk (2009), further complicates the narrative, demonstrating how young disabled people navigate their identities within the family and sporting contexts. Their research provides a nuanced understanding of the psychological complexities inherent in the sports participation of individuals with disabilities, highlighting the interplay between personal empowerment, social perceptions, and identity formation (Fitzgerald & Kirk, 2009).

The psychological implications of adaptive sports extend into the realm of mental health and sport performance, with Gavriloava, Donohue, and Galante (2017) examining how athletes without pathology can optimize their mental health through sports. Their findings, which advocate for a holistic

approach to athlete development, resonate with the experiences of individuals with disabilities, where the psychological benefits of sports participation encompass not only the management of disability-related challenges but also the enhancement of general mental well-being (Donohue et al., 2014). Grandisson, Tétréault, and Freeman (2012) discuss the integration processes within sports for adolescents with intellectual disabilities, identifying the barriers and facilitators to participation. Their work sheds light on the structural and social challenges that can hinder access to sports for individuals with disabilities, pointing to the necessity of inclusive policies and practices that enable participation and thereby, the accrual of psychological benefits (Grandisson et al., 2012). Hammer et al. (2017) explore the concept of posttraumatic growth among paratriathletes with acquired disabilities, presenting a compelling case for the transformative potential of sports. Their findings illustrate how adaptive sports can serve as a powerful mechanism for psychological adaptation and growth following traumatic injury, emphasizing the capacity of sports to foster resilience and a renewed sense of purpose (Hammer et al., 2017).

In examining the broader impacts of organized sports participation, Hoffmann, Barnes, Tremblay, and Guerrero (2022) underscore the associations between sports engagement and mental health difficulties among children and adolescents. Their research contributes to the understanding of how sports can serve as a preventive and therapeutic tool in addressing mental health challenges, a perspective that holds particular relevance for individuals with disabilities (Hoffmann et al., 2022). Milistetd et al. (2021) discusses the psychosocial development and mental health of youth athletes, exploring the effects of age, sport type, and training experience. Their research offers valuable perspectives on how sporting participation can influence developmental trajectories and mental health outcomes, with implications for understanding the nuanced experiences of athletes with disabilities (Milistetd et al., 2021).

Panza et al. (2022) focus on developing and evaluating a peer-based mental health literacy intervention among adolescent athletes, demonstrating the efficacy of peer support in promoting mental health awareness and resilience in the sporting context. This approach underscores the value

of community and peer networks in enhancing the psychological well-being of athletes, including those with disabilities, through shared understanding and mutual support (Panza et al., 2022). The evidence-informed framework proposed by Purcell et al. (2022) for promoting mental well-being in elite sport provides a comprehensive strategy for addressing mental health within the high-performance sports sector. While focused on elite athletes, the principles outlined in their framework have broad applicability, including for individuals with disabilities participating in adaptive sports (Purcell et al., 2022). Their work emphasizes the importance of a holistic and supportive approach to mental health, integrating psychological support into the fabric of athletic training and development. Finally, Tabaie (2022) focuses on adaptive sport participation in the pediatric population, providing a crucial perspective on the early introduction of children with disabilities to sports. Her work highlights the importance of creating supportive and accessible sporting opportunities for young individuals with disabilities, paving the way for lifelong engagement and the associated psychological benefits (Tabaie, 2022).

In summary, the literature reviewed herein unequivocally supports the notion that adaptive sports play a crucial role in the psychological well-being and social integration of individuals with disabilities. Through the lens of these diverse studies, our research seeks to contribute to the ongoing discourse on the psychological outcomes of adaptive sports participation, offering insights into the experiences, challenges, and triumphs of individuals with disabilities as they navigate the world of sports. This exploration indicates the imperative of fostering inclusive, supportive, and accessible sports environments that recognize and celebrate the potential of every athlete, regardless of disability.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a qualitative research design to explore the psychological outcomes of engaging in adaptive sports for individuals with disabilities. Given the exploratory nature of our research, we chose semi-structured interviews as our primary data collection method. This approach allowed us to delve into the personal experiences, perceptions, and feelings of our participants while maintaining the flexibility to explore emerging themes.

Participants were recruited through adaptive sports programs, disability advocacy groups, and social media platforms. The inclusion criteria required participants to be:

At least 18 years of age.

Diagnosed with a physical and/or sensory disability.

Actively participating in an adaptive sports program for at least six months.

The study aimed for theoretical saturation, the point at which no new information or themes are observed in the data. This was achieved by continuously analyzing the data throughout the data collection process and stopping the recruitment once additional interviews no longer contributed to new insights or themes. This approach ensured a comprehensive understanding of the psychological outcomes of engaging in adaptive sports for individuals with disabilities.

2.2. Measures

2.2.1. Semi-Structured Interview

Semi-structured interviews were conducted by the research team, each lasting between 45 to 90 minutes. These interviews were carried out using a combination of in-person and virtual settings, according to the preferences and accessibility needs of the participants. The interview guide comprised open-ended questions focusing on participants' experiences with adaptive sports, perceived psychological impacts, and the role of these activities in their overall mental health and well-being.

To ensure a thorough understanding and interpretation of participants' experiences, interviews were audio-recorded with their consent and transcribed verbatim. Participants were also assured of their anonymity and the confidentiality of their responses.

2.3. Data analysis

Data analysis followed a thematic analysis approach, using NVivo software to facilitate the organization and coding of the data. Initial codes were generated from the first few interviews and continuously refined and expanded upon as more data were collected. Through an iterative process of coding and theme development, we identified patterns and constructed themes that captured the essence of the participants' experiences and perceptions.

All participants provided informed consent before participating in the study. They were informed about the

study's purpose, their right to withdraw at any time, and the measures taken to protect their privacy and data.

3. Findings and Results

In the present study, a total of 23 participants were enrolled to explore the psychological outcomes associated with engaging in adaptive sports. The demographic composition of the participants was diverse, aiming to capture a broad spectrum of experiences within the adaptive sports community. The age of participants ranged from 18 to

55 years, with a mean age of 32 years. The cohort consisted of 13 males and 10 females, reflecting a balanced gender distribution. In terms of disability types, the group included individuals with mobility impairments (n=9), visual impairments (n=6), hearing impairments (n=4), and other physical disabilities (n=4), such as cerebral palsy and multiple sclerosis. The participants were involved in a variety of adaptive sports, including wheelchair basketball (n=5), adaptive rowing (n=4), para-athletics (n=4), blind soccer (n=3), wheelchair tennis (n=3), and other activities (n=4), such as archery and swimming.

Table 1

The Results of Qualitative Analysis

Categories	Subcategories	Concepts (Open Codes)
Emotional Well-being	Emotional Resilience	Improved mood, stress relief, reduced depression, enhanced happiness, emotional stability
	Self-Esteem	Increased confidence, pride in achievements, positive self-view, feeling valued
	Joy and Fulfillment	Sense of joy, fun, satisfaction from participation, moments of happiness
	Anxiety Reduction	Decreased anxiety levels, feeling calmer, less nervousness
Social Integration	Sense of Belonging	Feeling of community, peer acceptance, social inclusion, camaraderie
	Social Support	Peer support, mentorship, family involvement, social network expansion
	Communication Skills	Improved social interaction, better communication, expressing needs
Personal Empowerment	Autonomy	Independence, self-reliance, control over life, decision-making power
	Goal Achievement	Setting goals, achieving targets, overcoming challenges, milestone recognition
	Personal Growth	Skill development, learning new abilities, personal improvement, resilience building
Cognitive Outcomes	Concentration and Focus	Enhanced concentration, better focus, mindfulness, engagement in the present
	Problem-Solving Skills	Strategic thinking, overcoming obstacles, adaptive strategies, resourcefulness
Adaptation and Coping	Coping Mechanisms	Developing coping strategies, managing stress, emotional regulation
	Resilience	Bouncing back from setbacks, perseverance, enduring challenges
	Acceptance	Self-acceptance, accepting disability, embracing new identity

The exploration into the psychological outcomes of adaptive sports participation revealed significant benefits across several domains, as evidenced by our thematic analysis. These domains encompass Emotional Well-being, Social Integration, Personal Empowerment, Cognitive Outcomes, and Adaptation and Coping, each comprising various subthemes enriched by direct quotations from participants.

3.1. Emotional Well-being

Participants frequently reported improvements in their emotional resilience, noting experiences of "improved mood and stress relief," with one individual stating, "After I started rowing, I've noticed I'm just generally happier, like there's a cloud lifted." The theme of Self-Esteem emerged strongly, with another participant expressing, "Wheelchair basketball didn't just change my physical strength; it rebuilt my confidence from the ground up." Participants also shared

feelings of joy and fulfillment, as well as significant anxiety reduction. "The water makes me feel free, and all my worries just fade away," highlighted the therapeutic effect of engagement in sports.

3.2. Social Integration

The adaptive sports programs fostered a strong sense of belonging among participants. "It's more than just a team; it's a family that understands me without words," one participant reflected. This sense of community was underpinned by social support networks that extended beyond the sports setting. Participants also credited sports participation with improving their communication skills, facilitating better interactions within and outside the sports community.

3.3. Personal Empowerment

Autonomy was a critical outcome, with individuals expressing how adaptive sports provided a platform for

independent decision-making and self-reliance. "I decide how, when, and where I ski. It's empowering," shared one skier. The achievement of personal goals was a source of goal achievement and personal growth, with participants acknowledging milestones and celebrating their achievements. "Every goal I hit makes me push for another; it's addictive," noted a cyclist.

3.4. Cognitive Outcomes

Enhancements in concentration and focus were notable benefits, with activities requiring mindfulness and present-moment engagement. "Archery requires focus; it's taught me to concentrate like nothing else," said one archer. The development of problem-solving skills was also a recurrent theme, as adaptive sports often require creative strategizing and adaptation.

3.5. Adaptation and Coping

Adaptive sports were pivotal in developing effective coping mechanisms, enhancing resilience, and promoting acceptance. "Adaptive sports didn't just help me adapt to my disability; they helped me accept and embrace it," one interviewee remarked, illustrating the profound impact on their journey towards acceptance and psychological adaptation.

4. Discussion and Conclusion

In this qualitative study exploring the psychological outcomes of engaging in adaptive sports for individuals with disabilities, five main themes were identified: Emotional Well-being, Social Integration, Personal Empowerment, Cognitive Outcomes, and Adaptation and Coping. Each main theme encompassed various categories that collectively captured the participants' experiences and perceptions. For Emotional Well-being, categories included Emotional Resilience, Self-Esteem, Joy and Fulfillment, and Anxiety Reduction. Social Integration was broken down into categories such as Sense of Belonging, Social Support, and Communication Skills. Personal Empowerment covered Autonomy, Goal Achievement, and Personal Growth. Cognitive Outcomes included Concentration and Focus, along with Problem-Solving Skills. Lastly, Adaptation and Coping comprised Coping Mechanisms, Resilience, and Acceptance.

Emotional Well-being emerged as a critical theme, where participants reported significant improvements in their

Emotional Resilience, experiencing mood improvements and stress relief. Self-Esteem enhancements were frequently mentioned, with sports participation contributing to increased confidence and a positive self-view. Joy and Fulfillment were evident as participants described feeling a sense of happiness and satisfaction from their involvement in sports, while Anxiety Reduction was noted through decreased anxiety levels and a sense of calmness achieved through physical activity.

The theme of Social Integration highlighted the role of adaptive sports in fostering a Sense of Belonging among participants, who felt part of a community and experienced peer acceptance. Social Support was pivotal, with athletes receiving encouragement and understanding from peers, family, and coaches. Communication Skills also improved as participants engaged more with their social networks, facilitating better interactions within and outside the sporting environment.

Personal Empowerment was characterized by participants' experiences of increased Autonomy, feeling empowered to make decisions and pursue goals independently through sports. Goal Achievement was significant, as setting and reaching personal and athletic milestones provided a sense of accomplishment and motivation. Personal Growth was reported as participants developed new skills and adapted to challenges, contributing to their overall sense of empowerment.

Cognitive Outcomes focused on the mental benefits of sports participation. Concentration and Focus were enhanced as individuals engaged in activities requiring precision and mindfulness. Problem-Solving Skills were developed through navigating the strategic and tactical aspects of sports, enhancing participants' ability to address challenges creatively.

Under Adaptation and Coping, participants detailed how adaptive sports served as a medium for developing effective Coping Mechanisms, managing stress, and regulating emotions. Resilience was bolstered as individuals faced and overcame challenges associated with their disabilities and sports. Acceptance of their disabilities was facilitated through sports participation, contributing to a more positive self-identity and adjustment to life's adversities.

In consistent with our findings, Aitchison et al. (2020) provide a systematic review protocol that aims to explore the experiences and perceived health benefits of individuals with disabilities participating in sport, setting the stage for our research. The acknowledgment of sports as a beneficial avenue for enhancing the quality of life for people with

disabilities is a sentiment our findings strongly support, particularly in terms of emotional well-being and self-esteem (Aitchison et al., 2020). This is consistent with Donohue et al. (2014), who demonstrated the utility of a family-supported approach to optimize mental health and sport performance in athletes, suggesting that the social support system surrounding the athlete plays a crucial role in realizing the psychological benefits of sports participation (Donohue et al., 2014).

Our research further highlights the importance of identity work in the context of sports participation, as discussed by Fitzgerald and Kirk (2009). Young disabled individuals engage in identity work within their families and sports environments, navigating their self-concept in a manner that enhances their psychological well-being. This dynamic interplay between sports participation and identity formation offers critical insights into the mechanisms through which sports can influence personal and social perceptions of disability (Fitzgerald & Kirk, 2009).

In terms of personal empowerment, our findings resonate with the work of Gavrilova, Donohue, and Galante (2017), who examined mental health and sport performance programming in athletes without pathology. Their emphasis on optimization suggests that sports can serve as a powerful platform for not only addressing challenges related to disability but also enhancing general mental health and personal development (Gavrilova et al., 2017). This is further supported by Grandisson, Tétreault, and Freeman (2012), who explored the integration of adolescents with intellectual disabilities in sports, underscoring the potential for sports to enable social integration and empowerment (Grandisson et al., 2012). The concept of posttraumatic growth among paratriathletes with acquired disabilities, as investigated by Hammer et al. (2017), aligns with our findings on adaptive coping and resilience. Sports provide a unique context for individuals with disabilities to experience growth and transformation, overcoming challenges and redefining their capabilities. This transformative potential of adaptive sports is a testament to its value in rehabilitation and psychological recovery (Hammer et al., 2017). Furthermore, the associations between organized sport participation and mental health difficulties, as identified by Hoffmann et al. (2022), highlight the preventive and therapeutic aspects of sports (Hoffmann et al., 2022). Our study extends these findings by specifically focusing on the unique experiences of individuals with disabilities, emphasizing the role of adaptive sports in addressing mental health challenges and promoting psychological well-being.

Kiuppis (2016) and Sahlin and Lexell (2015) provide critical perspectives on the inclusion in sports and its impact on the quality of life for people with neurologic disabilities, respectively (Kiuppis, 2016). These studies underscore the necessity of inclusive and accessible sports opportunities to fully realize the psychological benefits of sports participation for individuals with disabilities. Our research supports the call for inclusive practices, demonstrating the positive outcomes of adaptive sports on social integration, empowerment, and quality of life.

In conclusion, our findings contribute to the burgeoning literature on the psychological benefits of adaptive sports for individuals with disabilities. Through the lens of previous studies, our research underscores the transformative power of sports participation in enhancing emotional well-being, fostering social integration, empowering individuals, promoting cognitive development, and facilitating adaptive coping. The collective body of work, including our study, advocates for the continued promotion and support of adaptive sports as a means of improving the lives of people with disabilities, highlighting the necessity of inclusive, supportive, and accessible sports environments.

5. Limitations & Suggestions

The profound impact of adaptive sports on individuals with disabilities underscores the importance of promoting and facilitating access to these activities. However, it's crucial to acknowledge the limitations of this study. The research was qualitative in nature, focusing on semi-structured interviews with a relatively small sample size. While this approach provided deep insights into the participants' experiences, it limits the generalizability of the findings. Additionally, the study relied on self-reported data, which may be subject to bias.

Future research should aim to address these limitations by incorporating larger, more diverse sample sizes and employing mixed-methods approaches to validate and expand upon the findings. Longitudinal studies could also provide valuable insights into the long-term effects of adaptive sports participation on psychological outcomes. Further exploration into the specific factors that contribute to the positive outcomes observed, such as the types of sports, level of competition, and the role of social support, would be beneficial. For practice, this study emphasizes the critical role of adaptive sports in enhancing the well-being of individuals with disabilities. Policymakers, educators, and healthcare providers should consider these findings in their

efforts to support and promote the inclusion of people with disabilities in sports and physical activities. Ensuring access to adaptive sports programs and facilities, along with providing necessary resources and support, can significantly contribute to the physical, social, and psychological health of this population. The implications of this research extend beyond the individual participants, suggesting a broader societal benefit to the inclusion and support of adaptive sports programs. By fostering an environment that values diversity, inclusivity, and accessibility, we can enhance the well-being of individuals with disabilities and, in turn, enrich the social fabric of our communities.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contributed in this article.

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