journal homepage: http://kont.zsf.jcu.cz
DOI: 10.32725/kont.2025.036

KONTAKT / Journal of nursing and social sciences related to health and illness

Original research article

Differences in the subjective quality of life among individuals with physical disabilities based on sports activity – in the Slovak context

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Abstract

Background: Individuals with physical disabilities face numerous limitations in daily life. Physical activity offers proven benefits. In this context, the text focuses on the role of sports in enhancing the quality of life for individuals with physical disabilities, while also linking these areas to social work. It draws upon the ideas of Jane Addams and Samuel Barnett, who viewed sports as a tool for addressing social issues.

Aim: The study aims to assess differences in quality of life between individuals with physical disabilities who engage in adapted sports and those who do not.

Methods: The WHOQOL-BREF questionnaire was used to measure quality of life across four domains: Physical health, Psychological health, Social relationships, and Environmental health. The study included 162 individuals with physical disabilities (110 sports participants, 52 non-participants).

Results: The findings indicate that sports participants report higher quality of life across all domains. The most significant differences were found in Psychological health, where athletes demonstrated higher self-esteem, greater life satisfaction, and lower stress levels. Physical health scores were also higher among sports participants, likely due to improved mobility and fitness. Social relationships benefited from increased interaction and community involvement. Environmental health scores were also elevated, reflecting better access to resources and well-being.

Keywords: Disabilities; Quality of life; Social work; Sport; Sport social work; WHOQOL-BREF

Introduction

The World Health Organization (WHO, 2023) estimates that 1.3 billion people (16% of the global population) live with significant disabilities, a number expected to rise due to demographic and epidemiological changes (Charlson et al., 2019; Polack et al., 2021; Vankova and Mancheva, 2015). Despite changing societal attitudes, individuals with disabilities continue to experience daily limitations and a lower quality of life than those without disabilities (Dewi et al., 2020). Quality of life is a subjective measure influenced by social conditions, psychological well-being, and external factors (Ahmed et al., 2024).

Since there are several types of disabilities, each with its own specific characteristics, this study focuses exclusively on physical disability, a predominant disability type among children and adults (Zahra et al., 2022). Physical disability is not limited to physical health problems; it entails numerous life restrictions and difficulties in performing daily activities, which can lead to social exclusion. It affects satisfaction with health, the ability to function independently, work and earn a livelihood, have and raise children, and achieve partnerships. As a result of the disability, changes occur in body perception, self-esteem, and negative feelings about physical appearance. People with disabilities may encounter hostile treatment in daily life and are at risk of stigmatization (Bakula et al., 2011; Syifa and Hadi, 2023). All these factors can contribute to a lower quality of life for people with disabilities. Their quality of life is significantly worse due to factors such as low education and income levels, difficulties accessing health and social services, and discrimination (Mercan et al., 2020).

In supporting the quality of life for people with disabilities, research has focused on the importance of physical activity, with its benefits being widely accepted (Maine et al., 2020). Although the importance of sports for physical and mental well-being is a widely shared concept, physical inactivity is very common among people with disabilities (Biagini et al., 2022). Fehsenfeld (2015) questions why people with disabilities should be interested in sports and physical activity when

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http://doi.org/10.32725/kont.2025.036

Submitted: 2025-02-19 • Accepted: 2025-06-02 • Prepublished online: 2025-08-28
KONTAKT 27/3: 288–294 • EISSN 1804-7122 • ISSN 1212-4117

their daily lives are troubled by various limitations. However, the benefits of sports have been documented in the physical, psychological, social, and emotional domains, including for people with disabilities (Baran et al., 2013; Crawford et al., 2015; Özer et al., 2012). Fehsenfeld (2015) particularly emphasizes the argument of social inclusion, where participation in sports and physical activity facilitates and promotes interaction between socially differentiated groups (Blick et al., 2015). Higher levels of physical activity are associated with responsibility (Diz et al., 2021), independence, and self-determination (Oviedo et al., 2020). Physical activity is positively linked with improvements in quality of life, life satisfaction, and community inclusion for individuals with disabilities (Lape et al., 2018). Additionally, there is an opportunity to break stereotypes that define this social group as weak and fearful, and therefore incapable of fully functioning in society (Czykwin and Rusaczyk, 2008).

Social work is uniquely positioned to effectively use sport to promote social inclusion and improve the lives of individuals, including those with disabilities (Bates and Kratz, 2022; Ekholm, 2017). Social workers have been identified as key professionals in promoting physical activity among people with disabilities due to their reach, credibility, empathy, and knowledge of their needs and rights (Monforte et al., 2022). The use of sport in social work dates back to Jane Addams and Hull House (Newman et al., 2022). Hull House, founded in 1889, used sports to engage vulnerable immigrant populations, addressing social issues in Chicago (Gems et al., 2017). Programs like basketball and boxing were pivotal in diverting young people from street gangs and supporting homeless boys (Reynolds, 2017). Sports strengthened social bonds, promoted health, and fostered a sense of community (Kratz and Rosado, 2022). Similarly, Samuel Barnett used sports at Toynbee Hall to improve the lives of the poor (Levická et al., 2018).

Despite some authors considering sport an "unconventional technique" in social work (Ekholm, 2017), its ability to engage hard-to-reach groups makes it valuable for achieving social work goals (Hartmann, 2003). Sport has been used for prevention, intervention, research, and advocacy (Newman et al., 2016). In recent years, the field of sport in social work has become a prominent area of practice and research (Moore and Gummelt, 2018). The Alliance of Social Workers in Sports (ASWI), founded in 2015, promotes this subdiscipline (Anderson-Butcher and Bates, 2021).

Sport-based strategies in social work address social issues and foster positive youth development (Ekholm, 2017; Sabbe et al., 2019). They help manage social goals by focusing on relationships and community rather than just individual resources (Arinze and McGarry, 2021). Sport can improve diversity, social justice, and connections between participants from different backgrounds (Hartmann and Kwauk, 2011; Newman et al., 2019). It is used in crime prevention and social exclusion efforts, promoting social cohesion (Ekholm, 2017; Massey and Whitley, 2016). Participation in sports benefits physical, mental, and emotional well-being (Crawford et al., 2015; Eather et al., 2023). Research shows the benefits of sport across various groups, including individuals with disabilities (Baran et al., 2013; Özer et al., 2012). Sport fosters connections among people from different cultures and backgrounds, contributing to social inclusion (Arinze and McGarry, 2021; Fehsenfeld, 2015). The social aspect of sport, including peer bonding and social support, enhances mental and social health (Eime et al., 2010).

Materials and methods

Our research focused on examining the subjective quality of life among individuals with physical disabilities, with an emphasis on comparing the quality of life between those who participate in adapted sports and those who do not engage in any sports activities. The chosen issue was investigated using the WHOQOL-BREF questionnaire – the standardized quality of life questionnaire developed by the World Health Organization in 1996. The questionnaire was created as a shortened version of the 100-item WHOQOL, which was found to be too lengthy. It comprises 26 items, 24 of which are grouped into four domains (physical, psychological, social relationships, and environment), and two items are separate assessments of overall quality of life and overall health status (Dragomirecká and Bartoňová, 2006).

The period refers to the previous two weeks, and respondents use a 5-point scale to rate their subjective satisfaction with various aspects of health and quality of life (Mercan et al., 2020). The domain score is scaled in a positive direction, meaning that a higher score indicates a higher quality of life. Internal consistency coefficients (Cronbach's α) are provided in Table 1. An acceptable level of internal consistency ranges between 0.6 and 0.9. Since Cronbach's α is negatively sensitive to a low number of items, the three-item domain of social relationships yields a lower value. The questionnaire was supplemented with questions regarding socio-demographic characteristics such as gender, region, type of disability, and participation in sports, which were gathered to provide an overview of the research sample's characteristics.

Table 1. Internal consistency coefficients (α) for WHOQOL-BREF domains

	Number of items	α
Domain 1 – Physical health	7	0,839
Domain 2 – Psychological health	6	0,858
Domain 3 – Social relationships	3	0,665
Domain 4 – Environmental health	8	0,831
WHOQOL-BREF	26	0,935

Data collection for the research was conducted from December 2023 to February 2024. The snowball sampling method was employed to access hard-to-reach population groups. The authors obtained 162 fully complete questionnaires. The research sample consisted predominantly of 102 men, representing 63% of the sample, while women made up 37% (n = 60) of the research sample, with representation from all regions of Slovakia. All respondents had physical disabilities, with 56.8% (n = 92) reporting congenital disabilities and 43.2% (n = 70) indicating acquired disabilities. Nearly 68% of respondents (n = 110) were engaged in sports, while 32% of individuals with disabilities (n = 52) reported not participating in any sports. Table 2 details the specific sports areas that respondents indicated they practice.

Table 2. Sports areas and number of respondents practicing them

Sports areas	*N*
athletics	4
badminton	1
wheelchair basketball	1
billiards	3
boccia	22
curling	5
cycling	12
floorball	6
sled hockey	8
karate	1
archery	7
para-alpine skiing	2
paradressage	1
swimming	14
table tennis	2
chess	5
sport shooting	7
wheelchair dance	5
bench press	2
volleyball	2

Results

The descriptive assessment of individual domains of quality of life, as well as overall quality of life and general health status among respondents categorized based on their participation in sports activities, is presented in Table 3. Among individuals with disabilities who actively engage in sports, the data indicate higher average scores across all quality of life domains, as well as in overall quality of life and general health status. Thus, the study results suggest a subjectively better quality of life for individuals with disabilities who participate in sports.

The domain of physical health pertains to the assessment of pain, medical treatment, energy for daily life, mobility, sleep quality, daily living abilities, and work capabilities. Engaging in sports seems to influence the evaluation of the physical health domain and supports an enhancement in the perception of physical health, likely because of regularly performed physical activities (such as training and competitive events). These activities contribute to improved fitness and overall health. Additionally, sports provide individuals with an opportunity to showcase physical abilities they may not have been aware of because they have not expressed them before (Jennen and Unlenbruck, 2004). Through sports activities, individuals can derive satisfaction from achieving set goals (Diaz et al., 2019).

The data suggests that, based on sports participation, the difference in subjective quality of life among individuals with disabilities is most pronounced in the domain of psychological health. This domain encompasses the enjoyment of life, sense of purpose, concentration abilities, acceptance of body image, self-satisfaction, and frequency of negative feelings. The tension, competitiveness, certain levels of stress, expectations, responsibility, and competitive mentality associated with sports likely significantly enhance the psychological resilience and mental attitude of individuals with disabilities (Isidoro-Cabañas et al., 2023). Moreover, higher scores in the psychological domain indicate that active individuals have better control over their emotions, a more positive relationship with their body image, and a higher level of self-esteem compared to inactive individuals (Biagini et al., 2022). Physical activity can positively affect how individuals perceive their bodies and provide means to combat negative social stereotypes and stigmatization commonly faced by people with disabilities (Giacobbi et al., 2008). Sports can improve self-image (Diaz et al., 2019; Ng et al., 2019), foster greater self-confidence, and enhance self-esteem (Diaz et al., 2019; Kurková et al., 2011; Nemček, 2016), while reducing stress and anxiety levels (Blauwet and Willick, 2012; Stevens et al., 2008). Participation in sports helps individuals focus on their abilities rather than their disabilities, thereby improving how they cope with their impairments (Biagini et al., 2022). It emphasizes their potential rather than their limitations (Guerra et al., 2018), thus fostering greater independence (Saavedra et al., 2007).

In the domain of social relationships, which includes satisfaction with personal relationships, sexual life, and social support from friends, individuals with disabilities who engage in sports also demonstrate higher quality of life. The findings

Table 3. Quality of life of people with disabilities based on participation in sports

		N	Mean	Median	STD	Min.	Max.
Sports active	Q1	110	**3.72**	4.00	1.050	1.00	5.00
	Q2	110	**3.30**	3.00	1.113	1.00	5.00
	Domain 1 – Physical health	110	**3.56**	3.57	0.846	1.29	4.86
	Domain 2 – Psychological health	110	**3.91**	4.16	0.745	1.17	5.00
	Domain 3 – Social relationships	110	**3.64**	3.67	0.926	1.00	5.00
	Domain 4 – Environmental health	110	**3.73**	3.76	0.737	1.00	5.00
Sports inactive	Q1	52	3.29	3.00	1.073	1.00	5.00
	Q2	52	3.10	3.00	1.089	1.00	5.00
	Domain 1 – Physical health	52	2.99	3.00	0.915	1.29	4.71
	Domain 2 – Psychological health	52	3.30	3.16	0.956	1.33	5.00
	Domain 3 – Social relationships	52	3.15	3.33	0.986	1.00	5.00
	Domain 4 – Environmental health	52	3.41	3.37	0.784	2.00	5.00

suggest that physical activity generally provides an important opportunity for individuals with disabilities to establish and strengthen social relationships (Biagini et al., 2022). The preparation and training for potential competitive events alone offer individuals with disabilities new opportunities for social contact with others in similar situations. Through mutual interaction, they are "forced" to communicate (often in a foreign language), accept others, adapt to specific conditions, and experience different cultures, customs, rules, and values. The increased interaction among athletes with disabilities helps to boost their self-confidence and fosters the development of social relationships (Biagini et al., 2022), while also facilitating communication (Pereira et al., 2013). Sports practice contributes to the socialization of individuals with disabilities (Guerra et al., 2018), enabling them to connect with peers. Sports thus play a crucial role in preventing issues such as social isolation, lack of interaction, and diminished self-confidence among individuals with disabilities (Yazici Gülay et al., 2022). Hutzler et al. (2013) report that sports significantly improve social competence among individuals with severe physical disabilities, offering a way to be socially active and form meaningful relationships on an equal footing, thereby enhancing emotional aspects (Laferrier et al., 2015). Additionally, sports play an important role in supporting family relationships (Halabchi et al., 2017). Engaging in adaptive sports can help foster an athletic identity (Diaz et al., 2019), which separates the label of disability from a pathological view (Gutiérrez Sanmartín and Caus i Pertegáz, 2006). Through sports activities, individuals with disabilities experience greater well-being, improve their functional abilities, and enhance their social participation (Diaz et al., 2019; Nemček, 2016).

In the domain of environment, differences in subjective quality of life ratings between groups of individuals with disabilities based on sports participation are also observed. This domain includes perceptions of safety in daily life, the healthiness of the physical environment, financial sufficiency to meet needs, access to daily information, opportunities for leisure activities, satisfaction with the living conditions, and the availability of healthcare and transportation. Although these factors might seem equally applicable to both groups of individuals with disabilities, sports participation appears to influence the perception of these factors. It is important to note that, in addition to the availability of resources, individuals with disabilities must also possess the knowledge and self-efficacy necessary to use these opportunities effectively (Howie et al., 2012).

These differences were also statistically verified. Using the Mann–Whitney *U* test, statistically significant differences were demonstrated in each domain of quality of life, as well as in overall quality of life. Specifically, individuals with physical disabilities who engage in sports showed a higher quality of life compared to those who do not participate in sports. However, no statistically significant differences were found in the domain of overall health (Table 4).

Table 4. Differences in quality of life based on Mann–Whitney *U* Test

		Sports active	Sports inactive	Z	***p*** **(α)**
Q1	*N*	110	52	–2.526	**0.012**
	X	87.64	68.51		
Q2	*N*	110	52	–1.211	0.226
	X	84.44	75.28		
Domain 1	*N*	110	52	–3.746	**0.000**
	X	90.98	61.45		
Domain 2	*N*	110	52	–3.753	**0.000**
	X	90.99	61.43		
Domain 3	*N*	110	52	–2.873	**0.004**
	X	88.74	66.18		
Domain 4	*N*	110	52	–2.712	**0.007**
	X	88.36	66.99		

The authors also examined the comparison of subjective quality of life across its specific indicators among respondents based on their participation in sports. The table displays only the most significant differences found by the authors among 15 indicators, where the *p*-value (α) <0.05. The influence of physical activity can be observed, for example, on perceptions of pain, joy in life, sense of purpose, body image, as well as on evaluations of sleep quality, concentration, work performance, personal relationships, and support from friends (Table 5).

Table 5. The most significant differences in specific quality of life indicators among individuals with physical disabilities based on participation in sports

Indicators	Mean		χ^2	p (α)
	Sports active	Sports inactive		
3. To what extent do you feel that physical pain prevents you from doing what you need to do?	3.44	2.71	14.175	0.007
5. How much do you enjoy life?	4.03	3.33	18.582	0.001
6. To what extent do you feel your life to be meaningful?	4.05	3.37	16.562	0.002
7. How well are you able to concentrate?	3.91	3.46	9.962	0.041
9. How healthy is your physical environment?	3.83	3.54	10.989	0.027
11. Are you able to accept your bodily appearance?	4.10	3.56	11.142	0.025
13. How available to you is the information that you need in your day-to-day life?	4.03	3.71	12.037	0.017
15. How well are you able to get around?	3.50	2.94	10.398	0.034
16. How satisfied are you with your sleep?	3.73	3.17	10.193	0.037
18. How satisfied are you with your capacity for work?	3.45	2.81	15.109	0.004
19. How satisfied are you with yourself?	3.74	3.06	16.598	0.002
20. How satisfied are you with your personal relationships?	3.82	3.29	9.682	0.046
22. How satisfied are you with the support you get from your friends?	4.10	3.77	17.343	0.002
23. How satisfied are you with the conditions of your living place?	3.82	3.50	16.694	0.002
26. How often do you have negative feelings, such as a blue mood, despair, anxiety, or depression?	3.60	3.05	12.636	0.013

Discussion

Quality of life is increasingly recognized as a key indicator of social needs and potential interventions in the social domain (Ruta et al., 2007). The study findings indicate that individuals with physical disabilities who engage in adapted sports achieve higher quality of life scores compared to inactive individuals. These results align with previous research (Ingrassia et al., 2020; Mockevičienė and Savenkovienė, 2012; Yazicioglu et al., 2012), which has confirmed greater life satisfaction and improved mental health evaluations among individuals with disabilities participating in sports. Additionally, Isidoro-Cabañas et al. (2023) report that active individuals demonstrate a more positive attitude toward their disability. Consistent with prior studies, this research further supports the positive impact of physical activity on the quality of life of individuals with disabilities. Guerra et al. (2018) highlight that access to basic social services is often limited for this group and emphasize that sports and physical activity significantly enhance their perceived quality of life.

However, remaining physically active is not always straightforward for individuals with disabilities, as they face various social, financial, and physical barriers (Mascarinas and Blauwet, 2018). The promotion of physical activity is influenced by different facilitators, including community organizations, peers with disabilities, and healthcare professionals. Monforte et al. (2022) further highlight the often-overlooked role of social workers, who can significantly contribute to fostering and maintaining physical activity among individuals with disabilities.

Conclusion

As a tool for social inclusion, sport provides opportunities for the development of self-esteem, independence, and social relationships. Social workers can serve as intermediaries between individuals with disabilities and available sports programs, contributing to the removal of barriers and the promotion of an active lifestyle. Social work plays a crucial role in creating conditions that enable individuals with disabilities to actively participate in sports activities, thereby enhancing both their physical and psychological well-being. In the United States, the concept of sport social work is rapidly evolving as a specialized field that integrates social work principles with sports activities to support disadvantaged groups, including individuals with disabilities. This approach is increasingly being used to improve social integration, mental health, and overall quality of life. The adaptation of similar models within the European context could facilitate the expansion of inclusive sports programs and enhance the support available to individuals with disabilities. The integration of sports into social work can serve as an effective tool for improving the quality of life for this population, fostering their full participation in society.

Ethics approval

The research was conducted in accordance with the principles and ethical guidelines outlined in the Code of Ethics of Pavol Jozef Šafárik University in Košice, which is based on the Principles of Research Practice in Scientific Publishing. All participants were informed about the purpose and procedures of the study and provided informed consent prior to participation. The study was conducted in accordance with the ethical standards of the Declaration of Helsinki for research involving human subjects.

Conflict of interest
The authors have no conflict of interest to declare.

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