



Review Article

The relationship between physical activity, sport, and social health in individuals with autism spectrum disorder

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Abstract

This study aims to examine the effects of physical activity and sport on social health in individuals with autism spectrum disorder (ASD). For this purpose, a comprehensive literature review was conducted using the databases Web of Science and Google Scholar with the keywords “autism spectrum disorder,” “physical activity,” “sport,” and “social health.” As a result of this review, it was found that ASD is a neurodevelopmental disorder characterized by deficits in social communication and the presence of restricted and repetitive behavioral patterns. Social health, on the other hand, refers to the quality of an individual’s interactions with society, their competence in fulfilling social roles, and their sense of belonging. The literature suggests that individuals with ASD often experience limited social interactions, resulting in weaker social health; however, physical activity and sport have been emphasized for their potential to enhance social skills in this population. Within this context, the study provides an in-depth evaluation of the effects of physical activity and sport programs on the social health components of individuals with ASD. The findings demonstrate that participation in physical activity and sport contributes positively to increasing social interaction, fostering a sense of belonging, learning social norms, and supporting self-confidence. Team sports, in particular, promote the development of empathy, sharing, and responsibility-taking skills, thereby improving social health levels. Moreover, the beneficial effects of physical activity in reducing stress, supporting emotional regulation, and facilitating social adaptation are also highlighted. These findings underscore the significance of holistic, social health-oriented approaches for individuals with ASD and indicate the need for further practice-oriented research in this field.

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Introduction

Autism Spectrum Disorder (ASD) is a lifelong neurodevelopmental condition characterized by persistent limitations in social interaction and communication, along with repetitive patterns of behavior (American Psychiatric Association [APA], 2013). Varying in severity across individuals, ASD brings about multidimensional challenges that affect not only the individual but also broader social life. Difficulties experienced by individuals with ASD in establishing socio-emotional reciprocity, engaging in verbal and non-verbal communication, and developing relationships often lead them into social isolation (Dawson et al., 2004; Lord et al., 2020). This, in turn, has a direct impact on their social health and hinders integration into society. Social health, defined as the quality of an individual’s relationships with their social environment, their level of adaptation to society, and their capacity to fulfill social roles, has been recognized by the World Health Organization as one of the three fundamental components of health (Huber et al., 2011; WHO, 1948).

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Higher levels of social health have been associated not only with enhanced physical and psychological well-being but also with greater life satisfaction and overall quality of life (Keyes, 1998). Components such as social support, belonging, acceptance, and societal contribution play a central role in building social health.

Physical activity and sport are widely acknowledged not only for supporting physical development but also for promoting psychological balance and social interaction (Azboy, 2021; Dinç et al., 2018). Particularly during childhood and adolescence, regular physical activity has been shown to generate positive outcomes in areas ranging from motor development to psychological resilience, and from social skills to the sense of belonging within a community (Çelik & Şahin, 2013; Yıldız & Çetin, 2018). Through team sports, individuals acquire values such as empathy, sharing, cooperation, and leadership, which strengthen social functioning; at the same time, psychological competencies such as self-expression, stress management, and self-esteem are also reinforced (Bandura, 1977; Kangalgil et al., 2024; Slutzky & Simpkins, 2009; Temel et al., 2024; Temel ve Mamak, 2023).

In this context, the use of physical activity and sport as an intervention tool for individuals with ASD holds significant potential in terms of enhancing social health. Deficits in social skills and communication difficulties in individuals with ASD can be addressed through structured physical activities and team-based sporting events. The social environments provided by sport offer natural learning contexts and increase opportunities for social interaction. Furthermore, through the neurobiological effects of physical activity, reductions in anxiety levels, improvements in sensory regulation, and overall well-being can be achieved (Ciddi & Yazgan, 2020; Goodway et al., 2019).

The purpose of this study is to examine the effects of physical activity and sport on the social health of individuals with ASD within the framework of the existing literature. A traditional review method was employed. To this end, searches were conducted in the Web of Science and Google Scholar databases using the keywords “autism spectrum disorder,” “physical activity,” “sport,” and “social health.” The scientific studies identified were reviewed, and a comprehensive evaluation of the topic was carried out. All sources used during the research process were properly cited in accordance with scientific ethical standards. The study highlights the need for holistic approaches that support both individual development and social participation. Addressing a relationship that has received limited attention in the literature, this work sheds light on the role of physical activity and sport in the social adaptation processes of individuals with ASD, while also contributing to special education practices and social policy development efforts.

Definition And Characteristics Of Autism Spectrum Disorder (ASD)

Autism Spectrum Disorder (ASD) is a complex, lifelong neurodevelopmental condition that affects individuals' social interaction, communication, behavioral, and sensory functioning (APA, 2013). ASD is characterized by deficits in socio-emotional reciprocity, impairments in verbal and non-verbal communication, and difficulties in initiating and maintaining relationships (Lord et al., 2020). Individuals often display challenges in interpreting social cues and responding appropriately, which may lead to social isolation (Dawson et al., 2004).

According to the DSM-5, ASD is classified under two core domains: persistent deficits in social communication and interaction, and restricted, repetitive patterns of behavior (APA, 2013). These symptoms manifest at varying levels across individuals and are assessed along a spectrum (Howlin et al., 2004). Emerging in early childhood, the symptoms commonly include deficits in joint attention, delays in language development, repetitive behaviors, and restricted interests (Jyoti & Lahiri, 2022; Pérez-Fuster et al., 2022).

Historically, the prevalence of ASD was estimated at approximately 1 in 500 individuals. However, due to advances in diagnostic procedures and increased awareness, current estimates indicate that 1 in 36 children are diagnosed with ASD (Centers for Disease Control and Prevention [CDC], 2023). This rise is not only associated with improvements in diagnostic practices but also with the broader conceptualization of the disorder within the spectrum framework. Although the exact causes of ASD remain unclear, the interaction between genetic predisposition and environmental factors is widely recognized as playing a significant role (Geschwind, 2008; Happé et al., 2006).

Physical Activity

Physical activity encompasses all bodily movements performed through the use of skeletal muscles that result in energy expenditure (Azboy, 2021; İlhan & Taşkın, 2019). This definition is not limited to exercise undertaken in gyms but also includes daily activities such as walking, running, dancing, household chores, and play. The effects of physical activity on human health are multifaceted, extending across physical, psychological, and social domains. Among its physical benefits are supporting the musculoskeletal system, maintaining posture, and preventing movement disorders. In addition, physical activity regulates metabolic processes, balances blood pressure and blood sugar, protects cardiovascular health, and plays a preventive role against chronic diseases such as obesity, diabetes, and hypertension (Azboy, 2021; Dinç, Güzel & Özbey, 2018).

From the perspective of mental health, physical activity contributes significantly to reducing symptoms of depression, anxiety, and stress; it also helps individuals feel better, enhances self-esteem, and supports psychological well-being. Endorphins released during exercise positively influence mood (Ciddi & Yazgan, 2020; Dinç et al., 2018). In terms of social functioning, physical activity strengthens interpersonal relationships, promotes empathy, and fosters a sense of belonging within a community. Recreational activities, in particular, play a role in the development of strong social bonds among individuals (Azboy, 2021; İlhan & Taşkın, 2019; Lustyk et al., 2004).

Studies indicate that individuals who engage in regular physical activity report higher psychological health scores compared to their inactive counterparts (Ciddi & Yazgan, 2020; Omorou et al., 2013). Its stress-reducing effects, support for immune function, and mitigation of the negative consequences of social isolation make physical activity especially important. Physical activities can take various forms, including aerobic exercises, flexibility training, strength training, and balance exercises, and are categorized by intensity through metabolic equivalents (METs) (Temel & Temel, 2023). The World Health Organization (WHO) recommends engaging in at least 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity physical activity per week (Azboy, 2021).

Physical activity is essential across all age groups. While young individuals acquire active lifestyle habits through play and sport, adults benefit from regular exercise in coping with stress and reducing risks of chronic diseases. For older adults, physical activity plays a critical role in maintaining independent living, preventing muscle loss, and ensuring continuity of social engagement (Dinç et al., 2018). Factors such as age, sex, body weight, health status, living environment, social support, and intrinsic motivation are among the primary determinants influencing participation in physical activity (Azboy, 2021; İlhan & Taşkın, 2019; Omorou et al., 2013). Social support is particularly important in sustaining an active lifestyle; family and community encouragement have been shown to significantly increase individuals' levels of physical activity.

In sum, physical activity constitutes not only the foundation of a healthy body but also of a healthy mind and social life. To improve quality of life, prevent disease, and support personal well-being, it is essential for every individual to have a physical activity program tailored to their age, capacity, and circumstances. Especially during extraordinary periods, the development of strategies to maintain societal activity levels and the dissemination of information on the importance of physical activity are vital for both individual and public health.

Sport

Sport is a structured set of physical activities conducted within rules, often in a competitive context, that fosters individuals' physical, mental, and social development (Çelik & Şahin, 2013; Heper et al., 2012). As a movement-based activity, sport exerts multidimensional effects not only on physical health but also on cognitive, emotional, and social growth. According to Alpman (1972), sport represents the educational expression of movement, which is considered the most fundamental indicator of vitality. Thus, sport shapes not only physical well-being but also personality development, social adjustment, self-confidence, and a sense of social responsibility. In early childhood, sport serves as one of the cornerstones of motor development, enabling children to acquire fundamental skills such as running, jumping, and ball control, thereby enhancing body awareness and coordination (Goodway et al., 2019; Yıldız & Çetin, 2018). Moreover, sport contributes to the development of mental processes, supporting skills such as attention,

problem-solving, goal-setting, and cognitive flexibility. Piaget's theory of cognitive development also emphasizes that children construct meaning and organize experiences through play and sport (Çelik & Şahin, 2013).

The social function of sport is equally significant. Group games and team sports provide children with opportunities to acquire social skills such as cooperation, adherence to rules, leadership, empathy, and responsibility. According to Bandura's social learning theory, children shape their social behaviors by observing and imitating what they learn from their environment during these processes (Çelik & Şahin, 2013). Experiencing emotions such as winning and losing in sports contexts enhances children's emotional resilience and facilitates social adaptation (Durualp & Aral, 2010; Salar, Hekim & Tokgöz, 2012). Sport also has pronounced effects on psychological resilience, fostering skills such as stress management, self-control, and self-esteem. Empirical evidence demonstrates that individuals who engage in regular sports activities tend to have lower anxiety levels and higher self-esteem (Akandere, 1999; Slutzky & Simpkins, 2009).

Beyond its individual benefits, sport plays a vital role at the societal level. Sport contributes to the adoption of an active, productive, and healthy lifestyle across the lifespan, not only during childhood. Individuals exposed to sport at an early age are more likely to sustain physical activity into later life (Özer & Özer, 2016), underlining the strategic importance of sport for public health.

The strong connection between sport and education is also noteworthy. Sport enhances the retention of learned knowledge, extends attention span, and cultivates a sense of social responsibility (Tkachuk, Leslie-Tosgood & Martin, 2003). For this reason, sport is recommended to be integrated into education both as a teaching method and as a tool. Sport, therefore, is an effective activity that supports multidimensional development at both individual and societal levels, contributing to lifelong learning processes. Encouraging children to engage in sport at an early age, expanding access to physical activity facilities, and raising parental awareness about the educational value of sport form the foundation of a healthy society.

Social Health

Social health is a multidimensional component of well-being that encompasses the quality of individuals' interactions with society, their capacity to effectively fulfill social roles, and their ability to sustain a harmonious life within their environment (Huber et al., 2011). According to the World Health Organization's 1948 definition, health is not merely the absence of disease or infirmity but rather a state of complete physical, mental, and social well-being (WHO, 1948). Within this framework, social health has become an integral dimension of overall health, directly influencing quality of life. Empirical research has shown that individuals with higher levels of social health recover more quickly from illness and experience greater longevity.

The concept of social health overlaps with terms such as social welfare, social well-being, and social flourishing. It is closely linked to an individual's participation in social activities, capacity to receive support, ability to build healthy relationships with others, and adaptability to societal life (Alidoust & Bosman, 2015; Larson, 1996). According to Örs (2012), social health refers to individuals' ability to find environments and conditions within their social context that do not harm their mental or physical health. This definition highlights the decisive role of trust, support, and a sense of meaning gained through social relationships in shaping health outcomes.

Keyes' (1998) model of social well-being conceptualizes social health across five components: social integration, social acceptance, social actualization, social contribution, and social coherence. Social integration refers to the extent to which individuals perceive themselves as part of society, while social exclusion represents the opposite process, leading to weakened societal ties (Yıldırım, 2014; Şahin, 2010). Social acceptance encompasses feelings of being valued, respected, and positively regarded by one's social environment, which in turn enhances self-esteem and subjective well-being (Vasile, 2013). Social actualization reflects one's belief in societal growth and the desire to be part of that progress (Keyes, 1998). Social contribution denotes the individual's sense of being useful to society and willingness to assume responsibility, whereas social coherence involves the ability to comprehend and make sense of societal processes (McCraty, 2011).

Social health should be understood not only at the individual but also at the societal level. Social determinants—such as the environment into which one is born, access to economic resources, educational attainment, access to social

services, and prevailing inequalities within a society—are directly associated with social health (WHO, 2008, 2011). According to Rarani et al. (2013), social health can be approached through three perspectives: the individual health dimension, the emphasis on a healthy society, and the attainment of a higher social status. Since social health is closely related to factors such as environmental safety, social justice, equal opportunity, and the availability of social infrastructure, ensuring equity and fairness within social policy is critical for its sustainability (Öner, 2014).

Weak social relationships give rise not only to psychological difficulties but also to significant physical health risks. These risks are directly associated with conditions such as obesity, high cholesterol, physical inactivity, cardiovascular diseases, and cancer (Sachdev, 2022; Umberson & Karas Montez, 2010). Deterioration of social ties or experiences of social exclusion can render individuals more vulnerable to chronic pain and undermine social integration (Dueñas et al., 2016; Van Bergen et al., 2018).

Social health also plays a decisive role in the development of children and students. Individuals with higher levels of social support demonstrate stronger academic achievement, psychological adjustment, and life satisfaction. A sense of belonging, trust, empathy, and supportive social networks are particularly influential in facilitating children's healthy development and societal adaptation (Blanco & Diaz, 2006; Keyes, 1998). Thus, structuring educational institutions not only with an academic but also a social health orientation constitutes a strategic approach with direct implications for future societal well-being.

In essence, social health pertains to the quality of an individual's relationships with their social environment, the degree of integration within society, the ability to receive and provide support, the aspiration for self-actualization, and the capacity to contribute to collective life. These factors are indispensable for sustaining a healthy life at psychological, physical, and societal levels. It can therefore be asserted that individuals with strong social health not only enhance their own life satisfaction but also contribute to the formation of healthier, more resilient societies.

Physical Activity, Sports, and Social Health in Individuals with Autism Spectrum Disorder

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition characterized by deficits in social interaction and communication skills, as well as repetitive behavioral patterns and sensory sensitivities (APA, 2013; Lord et al., 2020). Individuals with ASD often experience difficulties in perceiving social cues and responding appropriately, which can hinder their participation in social contexts and the establishment of meaningful relationships (Dawson et al., 2004). Consequently, this condition may pose a significant barrier to the social health of individuals with ASD. Social health is defined as the quality of an individual's relationships with society, the ability to fulfill social roles, and the capacity to lead a harmonious life within their environment (Huber et al., 2011; Krahn et al., 2021). Enhancing social health is therefore crucial for improving the quality of life and fostering the social integration of individuals with ASD. In this regard, physical activity and sports play an important role in promoting social health by strengthening social skills among individuals with ASD (Azboy, 2021; İlhan & Taşkın, 2019).

Physical activity encompasses all movements that involve the use of skeletal muscles and require energy expenditure, providing not only physical but also psychological and social benefits (Dinç et al., 2018). For individuals with ASD, regular physical activity has been shown to contribute to improvements in domains directly associated with social health, such as social adaptation, self-esteem, and willingness to participate in group activities (Ciddi & Yazgan, 2020). Group-based physical activities and sports offer structured environments for social interaction, enabling individuals with ASD to practice and acquire essential social skills such as empathy, turn-taking, eye contact, and understanding others' emotions (Bandura, 1977; Çelik & Şahin, 2013).

Moreover, the development of motor skills and bodily awareness through sports enhances self-confidence, thereby facilitating greater willingness and success in social interactions (Goodway et al., 2019). Team sports, in particular, foster values such as cooperation, adherence to rules, and social responsibility, which in turn support the social health of individuals with ASD (Durualp & Aral, 2010; Salar et al., 2012). Feeling a sense of belonging within a community strengthens individuals' sense of inclusion, which is directly linked to components of social health such as social integration and social contribution (Keyes, 1998; Temel, Çalı & Yıldız, 2024).

Utilizing physical activity and sports as an intervention to reduce social isolation in individuals with ASD is valuable not only from a health perspective but also in terms of education, rehabilitation, and social adaptation. Through appropriately structured programs, it is possible to enhance both individual and societal competencies. As the level of social acceptance of individuals with ASD increases, they are more likely to perceive themselves as valuable members of society and to embrace social responsibility (McCartney et al., 2019; Vasile, 2013). Consequently, higher-order components of social health, such as social actualization and social coherence, can also be fostered.

Physical activity and sports practices hold strategic significance in improving social health levels and strengthening social integration in individuals with ASD. Integrating sport-based programs that promote social health into education and social policy frameworks may yield long-term outcomes that enhance both individual well-being and societal inclusivity.

Conclusion

ASD is a lifelong neurodevelopmental condition in which individuals experience various limitations in social interaction, communication, and behavioral domains. Deficits in understanding social cues, building relationships, and fulfilling social roles often hinder the development of social health in individuals with ASD (APA, 2013; Lord et al., 2020). Social health, which encompasses the individual's capacity to integrate into society, receive support, and establish meaningful relationships, represents an indispensable dimension of well-being alongside physical and mental health (Huber et al., 2011; WHO, 1948).

This study has comprehensively examined the impact of physical activity and sports on the social health of individuals with ASD. Findings suggest that physical activity and sports provide benefits not only in physical domains but also in psychological and social aspects. Regular physical activity reduces stress levels, enhances self-esteem and self-regulation, and—through group activities—fosters the development of essential social skills such as empathy, cooperation, and communication (Çelik & Şahin, 2013; Dinç et al., 2018). Structured and consistent engagement in sports facilitates greater interaction with the social environment, supports social adaptation, and strengthens individuals' sense of belonging (Keyes, 1998; Blanco & Diaz, 2006). Beyond childhood, sports contribute to lifelong health and productivity. Individuals introduced to sports at an early age are more likely to incorporate physical activity as a permanent aspect of their lifestyle in later years (Özer & Özer, 2016). This underscores the importance of sports for both public health and individual well-being. Accordingly, physical activity and sports directly influence the subdimensions of social health—including social integration, social contribution, social acceptance, and social coherence—by reinforcing the individual's relationship with society.

Furthermore, the role of social support systems in facilitating the participation of individuals with ASD in physical activity cannot be overlooked. Support from families, teachers, and professionals plays a critical role in ensuring access and continuity of physical activity, while also enhancing motivation and adaptive capacity (Ciddi & Yazgan, 2020; İlhan & Taşkın, 2019). In this process, the collaboration of educational institutions, healthcare providers, and social service professionals is essential for the development of individualized sport programs. The potential of physical activity and sports to improve the social health of individuals with ASD is significant. This potential not only enhances quality of life but also contributes to broader societal goals such as inclusivity, equality, and social cohesion. Therefore, there is an increasing need for accessible and inclusive programs that promote regular participation in physical activity for individuals with ASD. Approaches grounded in social health and holistic intervention models will serve as effective tools in maximizing the potential of these individuals.

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