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The Role of Sports and Physical Activity in the Social Development of Individuals with Autism

Mustafa HAN¹

Abstract

The aim of this study is to examine studies on the effects of sport and physical activity on social skills in individuals with autism. In this context, academic studies published between 2000 and 2024 on the subject were analyzed and the contributions of sports and physical activity to the social development of individuals with autism were discussed.

In the research, graduate thesis studies, articles and books directly related to the subject were examined. These studies were taken from Google academic and national thesis center. Descriptive analysis and content analysis techniques were used to reveal the existing situation. The effects of sports and physical activity on social skills were evaluated by using document analysis method in data collection. As a result of the literature review, 34 scientific studies directly examining the effects of sports and physical activity on social skills in individuals with autism spectrum disorder were found.

According to the findings obtained as a result of the examination of the existing studies in the literature, it was determined that sports and physical activity have positive effects on social skills in individuals with autism spectrum disorder. As a result of the analysis, it was determined that sports and physical activities reduced hyperactivity and aggressive behaviors of individuals with autism, contributed to the development of social interaction and communication skills, contributed to the improvement of perception status with increased eye contact and played an important role in the development of social skills.

In conclusion, attention should be paid to individual differences and characteristics in the preparation of sports and physical activity activities to improve the social skills of individuals with autism. It is thought that this study will contribute to a better understanding of the benefits of sports and physical activity on social skills in individuals with autism and to the research to be conducted on the subject in the future.

Key words: *Sport, autism, physical activity, social skills.*

Otizimli Bireylerin Sosyal Gelişiminde Spor ve Fiziksel Aktivitenin Rolü

Öz

Bu araştırmanın amacı, spor ve fiziksel aktivitenin otizimli bireylerde sosyal beceri üzerine etkilerini içeren çalışmalarını incelemektir. Bu kapsamda, konu ile ilgili 2000-2024 yılları arasında yayınlanmış akademik çalışmalar analiz edilerek spor ve fiziksel aktivitenin otizimli bireylerin sosyal gelişimine katkıları ele alınmıştır. Araştırmada doğrudan konu ile ilgili lisans üstü tez çalışmaları, makaleler ve kitaplar incelenmiştir. Bu çalışmalar Google akademik ve ulusal tez merkezi üzerinden alınmıştır. Var olan durumu ortaya koymak için kullanılan betimsel analiz ve içerik analizi tekniğine başvurulmuştur. Verilerin toplanmasında doküman analizi yöntemi kullanılarak, spor ve fiziksel aktivitenin sosyal beceri üzerindeki etkileri değerlendirilmiştir. Literatür taraması sonucunda, otizm spektrum bozukluğu olan bireylerde spor ve fiziksel aktivitenin sosyal beceri üzerindeki etkilerini doğrudan inceleyen 34 bilimsel çalışmaya ulaşılmıştır.

Literatürde var olan çalışmaların incelenmesi neticesinde elde edilen bulgulara göre otizm spektrum bozukluğu olan bireylerde spor ve fiziksel aktivitenin sosyal beceri üzerinde olumlu etkileri olduğu tespit edilmiştir. Yapılan analizler sonucunda; spor ve fiziksel aktivitelerin otizimli bireylerin hiperaktivitesini ve agresif davranışlarını azalttığı, sosyal etkileşim ve iletişim becerilerinin gelişmesine katkı sağladığı, göz temasının artması ile birlikte algı durumunun iyileşmesine katkı sağladığı ve sosyal becerilerinin gelişmesinde önemli rol oynadığı tespit edilmiştir.

Sonuç olarak, otizme sahip bireylerin sosyal becerilerini geliştirmeye yönelik spor ve fiziksel aktivite etkinliklerinin hazırlanmasında bireysel farklılıklara ve özelliklere dikkat edilmelidir. Araştırmanın, otizimli bireylerde spor ve fiziksel aktivitenin sosyal beceri üzerine faydalarının neler olduğunun daha iyi anlaşılmasına ve daha sonraki süreçte konu ile ilgili yapılacak araştırmalara katkı sağlayacağı düşünülmektedir.

Anahtar kelimeler: *Spor, otizm, fiziksel aktivite, sosyal beceri.*

¹ Dr. Öğr. Üyesi, Muş Alparslan Üniversitesi, m.han@alparslan.edu.tr, <https://orcid.org/0000-0002-6731-0746>

Introduction

Autism Spectrum Disorder (ASD) is defined as a neurodevelopmental disorder characterized by impairments in social communication and limited, repetitive behaviors, interests or activities (Görgün & Melekoğlu, 2016). Autism spectrum disorder is a neurodevelopmental disorder that manifests itself with inability and reluctance to make eye contact with the other person from infancy, inability and unwillingness in joint attention and pointing behaviors (İnce, 2017).

The most important factors that make individuals with autism want to participate in sports and physical activity are that sports and physical activity generally contain enjoyable elements such as fun, joy, need for movement, socialization (Sertkaya et al., 2012). Physical activity can be most easily explained as moving the body to expend energy (Güven & Diken, 2014). The general name of social skills is behaviors and thoughts that have a direct impact on the environments in which individuals are in, their ability to gain a place in society and to develop human relations in a positive way (Samancı, 2017).

Today, the most common type of disability among individuals with special needs is autism spectrum disorder. Autism is a lifelong neurodevelopmental disorder that shows symptoms in the first years of life. Sports and physical activity are very important for individuals with ASD. Sports and physical activity contribute to the social skills and mental development of individuals with ASD. Individuals with ASD have a greater need for sports. Sports and physical activity positively affect individuals with ASD to behave appropriately in the social environments they are in, to gain a place in the society and their interpersonal communication (Öztürk, 2012).

Human beings are dependent on socialization and communication. Individuals with ASD have many deficiencies in this regard. In this case, sports and physical activity enable individuals with ASD to cope with their disabilities and to gain social skills such as listening, initiating and maintaining a conversation, introducing themselves, self-confidence, honesty, tolerance, cooperation, etc. (Şahan, 2008).

In this study, it was aimed to analyze studies on the effects of sports and physical activity on social skills in individuals with autism. In this direction, academic studies published between 2000 and 2024 on the subject were analyzed and the contributions of sports and physical activity to the social development of individuals with autism were discussed.

Sport and Physical Activity

The pedagogical and social perception that increases the psychological and physiological health of the individual and regulates his/her behavior is called sport. In other words, it is a phenomenon that ensures the development of the individual's soul, body and ideas and the harmony between them (Yetim, 2000).

The human body is in constant need of movement due to its innate characteristics. However, today's technological developments lead people to inactivity from childhood and this leads to a lifestyle that is not suitable for the structure of the human organism. This lifestyle causes organic breakdowns, leading to various diseases and increasing health problems. The concept of physical activity has become a phenomenon that is valid in every field and directs our lives today. Physical activity is an international term used to describe body movements using energy. It refers to all body movements performed with skeletal muscles and resulting in energy expenditure (İnce, 2017).

Importance and Benefits of Sports and Physical Activity

Sport and human life have become inseparable from each other, and its role in keeping people healthy, happy and motivated throughout their lives is much greater than previously thought. Sport is an important element in preventing people from being alone in their own lives and acting irresponsibly. Thanks to sports, many people start to act together to pursue the same goals. This shows that sport is an important phenomenon in physical, mental and social development (Ramazanoğlu et al., 2005). Sport offers many benefits that have a positive impact on the well-being of all individuals, regardless of age, in the short and long term, the most prominent of which are presented below (Terlemez, 2022).

1. Individuals who play sports feel fitter as a result of exercise.
2. As a result of sport, the body raises the mentality of the person. Individual or team sports are fun and help to reduce stress.
3. Programmed exercise and movements build muscle. Muscles need more energy than fat. For this reason, people who play sports continue to expend calories even at rest.
4. The feeling of hunger decreases. Individuals who do sports feel less hungry. Therefore, it minimizes the weight problem.

5. Doing sports accelerates the digestive system. Calorie consumption continues after exercise. Weight control is more easily achieved with regular and programmed sports.
6. Immunity of individuals who do sports is stronger
7. A clear mind is possible with endurance training. Exercise improves blood circulation in the brain, which allows people to think better.
8. The sleep quality of individuals who do sports improves.
9. Physical activity accelerates the excretory system (Orhan, 2019).

The importance of physical education and sports in preventing emotions such as aggression, anger and jealousy caused by the attitudes and behaviors of society towards individuals is too great to be ignored. It is known that sports play a role in interpersonal socialization and it can be said that this role leads to new friendships and these friendships provide great support especially for disabled individuals to stay intertwined with the society (İlhan, 2008).

The Importance of Physical Activity and Sports in Individuals with Autism Spectrum Disorder

Children with ASD have deficiencies in their personality, social and physical development compared to TD children due to their inability to communicate properly. Children with autism spectrum disorder have problems in the field of health. Their physical development is also affected by depression, anxiety, diabetes, blood pressure and epileptic seizures. This situation also increases the risk of death (Termeli, 2019).

Due to the inability of individuals with autism to lead a sufficiently active life and the side effects of the medical drugs they are currently using, some serious problems are seen in obesity, musculoskeletal and circulatory system in later ages (Orhan, 2014).

The importance of physical activity and sports in preventing emotions such as aggression, anger and jealousy caused by the attitudes and behaviors of society towards disabled individuals is too great to be ignored (Han, 2022).

Autism Spectrum Disorder

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by impairments in social communication, repetitive and restricted behaviors and limited interests (Dinure, 2022). Autism Spectrum Disorder (ASD) is defined as a neurodevelopmental disorder characterized by impairments in social communication and limited, repetitive behaviors, interests or activities (Görgün & Melekoğlu, 2016).

Autism spectrum disorder is a neurodevelopmental disorder that manifests itself with inability and unwillingness to make eye contact with the other person, joint attention and pointing behaviors from infancy (İnce, 2017).

Some of the definitions made by psychiatrists are as follows: ASD is defined as a complex disorder that occurs in individuals in the early stages of life and causes delays in communication, one-to-one human relations, emotion sharing, behavior patterns and basic skills (Gültekin & Başıyigit, 2018).

Causes and Symptoms of Autism Spectrum Disorder

Although the exact cause of ASD has not yet been determined, many different views and theories have been put forward to explain the causes of ASD since the mid-19th century. Today, one of the accepted views on autism is that different factors such as genetic, neurological, and environmental factors either individually or together contribute to autism (Arslan, 2019).

- Not looking at his/her name: Children do not respond to being called by name but respond to sounds that interest them.
- Delayed speech: Individuals have delayed language development as a symptom of ASD. They begin to speak at a later period than their peers, rather than when they should speak. Their speech is more delayed and words are more limited than their peers.
- Do not appear to hear: They do not respond when called. They do not respond immediately to commands or respond late.
- Stereotypical movements: Individuals engage in repetitive and repetitive behaviors.
- Lack of eye contact: Individuals are limited in eye contact. Some individuals do not make eye contact at all.
- Lack of peer interaction: Communication with peers is visibly limited.
- Restlessness-crying: Children show signs of constant restlessness and crying (Han, 2022).

Diagnosis and Treatment of Autism Spectrum Disorder

The individual must first undergo a medical and neurological evaluation. If there is no medical disorder as a result of these evaluations, psychiatric evaluation is started. At this stage, structured interviews, rating scales, and observations are used as well as resources with diagnostic criteria such as DSM-5 and ICD-10 (Soykan & Mirzeoğlu, 2020).

An individualized treatment plan is required for children with ASD and their families. The intervention may vary according to conditions such as mental, physical and age. Reducing core symptoms, enabling individuals to realize their potential, treating mental and physical illnesses that disrupt the harmony of family members, applying education and proven treatment methods are mentioned as treatment goals in the NICE 2013 guidelines. Definitive cure is not yet possible in autism, but cases that start at an early age and gain educational habits intensively and in sufficient time are among the most promising approaches to reduce core symptoms (Şahan, 2008).

Autism Spectrum Disorder Classification

- Mild Level (Level 1): When unsupported, social skill disruptions gradually increase and lead to significant problems, and are seen in cases of unsuccessful reaction to social interaction (Han & Sari, 2022).
- Intermediate Level (Level 2): Visible deterioration in communication skills, inadequacies in social skills that continue to be seen despite assistance (Görgün & Melekoğlu, 2016).
- Severe Level (Level 3): Very intense disruptions in communication, very little response to limited social interaction attempts (Yetim, 2000).

Social Skills and the Importance of Social Skills

The ability of individuals to gain a place in society is realized through acceptance by other members of society (Samancı et al., 2007). Skill is a process that covers the whole life, from birth to death. It is named according to various age groups and developmental stages such as personal care, social and daily life skills, vocational skills (Kulaksızoğlu, 2016).

Regardless of the type of learning, these skills should meet the primary needs of children and be appreciated when they are realized. With the realization of this event, the child's life experiences and positive experiences will increase. The ability of all individuals with TDD or disabilities to live healthy and coexist with other individuals in the society is directly related to their social skills. It is possible to find many definitions of social skills in the literature (Öztürk, 2012).

The adventure that begins with the birth of the child allows the child to behave according to his/her age and social environment in every situation he/she encounters, to be accepted and to gain a qualified place in the society of which he/she is a member. The child needs to comprehend many different and important social behaviors in order to exhibit social skills that are more appropriate for his/her environment and age, to start and continue social skills when necessary, and to finish them later (İnce, 2017). Children need these behaviors every moment of their lives. When the behaviors of infancy are examined, the crying of a newborn baby is not just a cry, the baby shows this behavior in order to meet its needs such as being hugged by its mother and being fed. These undeveloped behaviors turn into more age-appropriate social skills over time. As the baby grows up, the baby who expresses what he wants to receive by crying, puts it into words and behaviors. In fact, the most important point to be mentioned here is this: Social skill learning continues for a lifetime (Kurşun, 2023).

Autism Spectrum Disorder and Social Skills

Children with autism show a noticeable difference in social skills compared to TD children. Non-verbal communication, imitation, joint attention and social reciprocity are among the areas where children with autism have limitations. These limitations are briefly explained in the following section (Karakılıç et al., 2023).

Nonverbal communication: It is the process of sending messages visually without “words”. In the first year of life, it is seen with eye movements, vocalization and pre-speech gestures. If an individual who is trying to initiate social interaction is weak in establishing eye contact and does not pay attention to gestures and facial expressions, this may cause the individual to have difficulty in maintaining communication (Terlemez, 2022).

Imitation: Individuals with ASD cannot show enough interest in the speech and games of other individuals due to inadequacy in imitation skills. Imitation skills have a very positive effect on the development of play development, language development, joint attention and social skills (Scattone, 2007).

Joint attention It is the ability to point to an event or object with a finger or to focus attention between people (Kunzi, 2015). Joint attention has two forms: initiation and responding. When these two are compared, it is widely

reported that they show much more limitations in initiating joint attention. These limitations of children with ASD seem to negatively affect the development of receptive language skills (Heper, 2012).

Social reciprocity: Social reciprocity is defined as the ability to share one's feelings with others, to participate in social activities, and to enjoy doing activities with others. In order to eliminate these difficulties and limitations, the importance of social skills teaching is increasing. Accordingly, the following section discusses the methods used in teaching social skills (Iliadis & Apteslis, 2020).

Social Skills Deficit in Individuals with Autism Spectrum Disorder

In the context of inadequacy in social skills, individuals with ASD have difficulties in making eye contact, initiating and maintaining joint attention, understanding social cues around them and focusing on social stimuli. The inability to pay sufficient attention to social stimuli leads to inadequacies in responding appropriately (Ekiz et al., 2022).

Individuals with ASD show inadequacies in social and emotional reciprocity that ensure the mutual continuation of communication. This prevents children with ASD from sharing their feelings with other children and participating in games for socialization. For this reason, they are unable to establish and maintain friendships (Kaya et al., 2020).

Method

Research Model

In the research, graduate thesis studies, articles and books directly related to the subject were examined. These studies were taken from Google academic and national thesis center. Descriptive analysis and content analysis techniques were used to reveal the existing situation. The effects of sports and physical activity on social skills were evaluated by using document analysis method in data collection. As a result of the literature review, 34 scientific studies directly examining the effects of sports and physical activity on social skills in individuals with autism spectrum disorder were found.

Population and Sample

The population of the study consists of domestic and foreign scientific articles, books and theses written on the social benefits of sports and physical activity in individuals with autism, while the sample of the study consists of domestic and foreign studies written on the social benefits of sports and physical activity in individuals with autism between 2000 and 2024.

Data Collection and Analysis

With the keywords autism, sport, physical activity and social skills, 13 postgraduate theses published between 2000 and 2024 were accessed in YÖK's Thesis Scanning Center and these theses were examined in detail. 9 of them are master's, 4 of them are doctoral and 21 of them are articles. By searching the words "autism, physical activity, sports, social benefits" in the YÖK national thesis center and Google academic search engine, the theses published within the scope of postgraduate thesis studies on the social benefits of sports and physical activity in individuals with autism from 2000 to the present day were tried to be reached and analyzed. The information in the research is based on secondary data sources, so no ethical permission was required since there was no ethical violation.

Results, Discussion and Conclusion

In this part of our research, we examined the main findings of the studies included in the systematic review and the effects of sport and physical activity on social benefits in individuals with autism within the framework of available evidence. In addition, this section includes the results of the review.

In the scientific study on "The Effect of Movement Training on Social Skills in Autism" conducted by Orhan (2014), it was concluded that the average scores of individuals who did not do sports were higher in all sub-dimensions compared to individuals who did sports between 1/2 and 2/3 hours. It was concluded that the averages of the individuals who practiced sports for less than 1 hour were higher than the individuals who practiced sports for 1 to 2 hours in advanced speaking skills, communication maintenance skills, directive giving skills, cognitive skills sub-dimension and total social skills score. It was concluded that the difference was caused by individuals who did not do sports or who did sports relatively less time.

In the scientific study on "Physical Activity in Children with Autism" conducted by Çelik and Buğday (2022), it was stated that children who participated in physical activities were more successful in their academic lives and had positive developments in their psycho-social aspects. Exercise programs and physical activity activities are of

great importance for individuals with disabilities as well as for individuals with TDD. It is understood that with regular participation in physical activity programs in individuals with special needs, self-confidence increases again in these children and they can establish much healthier relationships with their peers. It has been reported that exercise in individuals with autism significantly improves not only the musculoskeletal system but also unusual stereotyped behavioral disorders.

In the scientific study titled "Evaluation of Social Skills of Children with Autism Spectrum Disorder in Terms of Participation in Physical Activity and Different Variables" by Termeli (2019), the frequency percentages of the social skill levels of individuals with ASD in their participation in BUFA were evaluated and examined according to age, gender and disability diagnosis. In this study, the Wilcoxon test shows that there is a significant difference between the first and last measurement scores of the individuals who participated in the Wilcoxon test in favor of the last measurement. The study shows that the total social skills scores of the participants increased with a statistically significant difference with participation in BUFA.

Since children with autism cannot communicate well enough, they have deficiencies in their personality, social and physical development compared to children with TDD. This situation is minimized with sports and physical activity. The results obtained from Aksoy's (2020) study titled "The Effects of Physical Activities as Recreational Activities on Social Communication in Children with Autism" are in parallel with the results of our research. When the data on the sub-dimensions in the research are examined, it is seen that there is a noticeable difference in the basic social skills of children who participate in physical activity and those who do not. While this difference was observed in basic social skills and self-control skills, there was no significant difference in basic communication skills and teamwork skills.

According to the findings obtained from the literature within the scope of our study, when the studies on the differences between children who participate in physical activity and children who do not participate in physical activity are examined, it is seen that children who participate in physical activity develop positively in social skills and academic sense. The study conducted by İlhan (2008) is in parallel with our research. Significant differences were observed in the basic social skills of children with ASD who did and did not participate in physical activity. It was concluded that children with ASD who participated in physical activity had better social skills. In this direction, it can be said that the positive effects of physical activity on children with ASD are quite high.

Arslan et al. (2019) in their social skills study on individuals with ASD, regular physical activities are thought to have the ability to positively change many social skills such as the ability of children with autism to express themselves, to communicate correctly with their peers, and to control their behavior. This result is in parallel with our study.

In our literature review, we have determined that sports and physical activity reduce the behaviors of individuals with autism such as stereotypic movements and tantrums. When Han (2022) examined the behavioral differences in autistic children who do and do not do sports, he found that there was a decrease in aggressive behavior problems such as spitting, continuous swinging, throwing objects, shouting, crying for no reason, harming himself and others, throwing tantrums. This result is in parallel with our research.

In a study conducted by Şentürk et al. (2015), it was found that exercise improved the basic social behaviors of children with ASD aged 5-6 years, and there were noticeable differences in the skills and behaviors of children who spent more time exercising. The different results of these studies affect the generalization of these findings. In addition, the results obtained from the study titled "The Effect of Doing Sports on Social Skill Levels of 7-12 years old Children with Autism Spectrum Disorder According to Trainer Opinions" by Şentürk et al. 2015 do not support the general conclusion we obtained from the literature.

Finally, the effect of participation in sports and physical activity on social skills in individuals with ASD was examined within the scope of the literature and the studies in the literature were analyzed in this study. The findings obtained as a result of these analyses showed that the participation of individuals with ASD in sports and physical activity within the framework of a regular program directly and positively affects the development of social skills in these individuals. In addition, it has been reported that participation in sports and physical activity increases attention span, decreases aggressive behaviors, improves communication with peers and typically developing individuals, and accelerates adaptation to social environments.

Recommendation

The participation of individuals with ASD in a regular sports and physical activity program is important for their social skills development, but it is of greater importance to prepare these programs in accordance with individual differences. In addition, sports trainers, coaches, experts and families should be involved in the planning of programs and sporting activities for individuals with ASD in cooperation. Considering the positive impact of

sports and physical activity on the social skills of individuals with ASD, the creation of accessible sports programs should be further encouraged.

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