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The road to championship: An example of an individual with autism spectrum disorder

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Abstract

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Keywords

autism, physical activity, sports, parents, coach

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Article

The road to championship: An example of an individual with autism spectrum disorder

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1. Introduction

Autism Spectrum Disorder (ASD) is a developmental disorder defined by diagnostic criteria including inadequate social communication and interaction, repetitive behavior and patterns of activity that affect the individual through their whole life [1]. Individuals with ASD have inadequate social skills, delayed motor development, and cognitive limitations [2], while diabetes, obesity and cardiovascular disorders are known to be observed [3]. Additionally, they appear to be insufficient in topics like communication and fulfilling personal needs [4]. Individuals with ASD and their families are faced with many problems led by physical inactivity linked to ASD [5, 6]. To reduce and resolve these negative health situations, leisure activities based on physical activity play an important role for individuals with ASD [7], just as for all individuals [8, 9, 10]. Participation in physical activity forms the basis for participation in sporting activities in the future [11] and is especially known to have many benefits for individuals with ASD [12].

While physical activity and sport are frequently used interchangeably, research indicates that these are, indeed, separate concepts [13]. Physical activity is defined as any bodily movements which result in energy expenditure involving the skeletal muscles [14].

Physical activities appear to have many shapes and forms, from walking, cycling, dance, games, water-based activities in pools to activities performed in fitness centers [15, 16]. In fact, they include activities that mainly do not involve competitive features that individuals participate in during their leisure [17]. In recent years, there appears to be an increase in studies about understanding the effects of physical activity for individuals with ASD [18]. Studies show that physical activity reduces stress levels, improves quality of life, and reduces feelings of exclusion and aggressiveness in individuals with ASD [19, 20, 21].

Physical activity begun at early ages ensures the individual benefits in the most effective way, in addition to creating a healthy physical structure and other physiological and psychosocial benefits [22, 23]. The Society of Health and Physical Educators state that at least 60 minutes of structured or 60 minutes of unstructured physical activities are very important for children in the preschool period [24]. Especially, in the early period of development of individuals with ASD, physical activity has critical importance with a preventive role for many possible problems that may be encountered in future periods [25]. In fact, learning movement skills and basic motor skills through participation in physical activity from a young age forms the basis for lifelong continuation of sports activities [11].

However, sports are activities created by the evolution of kinetic games involving a challenge at the core [26], allowing the opportunity for individuals to express themselves [27]. According to another definition, sport is defined as an activity involving competition, where two or more participants participate with the aim of competing. Sports involves official rules and procedures along with tactics and strategies and require special neuromuscular skills, high degree of difficulty and effort [17].

Sports provide similar benefits to physical activity, but develop more discipline, competitive spirit, friendship, physical/mental health and social integration [28]. Pensgaard and Sorensen [29] stated that through sports individuals with special needs may be able to acquire strengthened autonomy and change their own lives. Valliant et al. [30] concluded that sportspeople with special needs had higher self-esteem, better life satisfaction and displayed more happiness in research investigating the psychological effects on sporting and non-sporting individuals with special needs. Gürkan et al. [31] concluded that participation in sports in individuals with special needs has a positive effect on individuals' psychological well-being. A study by Scarpa [32] observed that sportspeople with special needs had increased motivation and self-esteem through orientation towards tasks and targets. Lins et al. [33] stated that social identity of sportspeople with special needs was associated with the obtained sporting gains and the discipline of sport. Sports involve a competitive spirit [28], have unique social identity requirements according to each discipline [33] and are effective in increasing self-esteem [32], which are considered to be the most important features differentiating sports from physical activity [34].

In line with the literature, both physical activity and sports are required by all individuals [35, 36] and are influenced by parental opinions especially in children with special needs [37]. Considering the difficulty these individuals have in finding appropriate physical activity programs for themselves, it appears that overcoming certain stages to become sportspeople is definitely a great success. Our research is considered important as it includes the experiences of an individual with ASD who successfully completed this process by parental support. In line with this, the aim of our study is to investigate the parents' influence on the path of an individual with ASD who began physical activity at a young age and achieved degrees in competition as a sportsperson, from physical activity to sports according to the opinions of the individual themselves, their coach and parents.

2. Materials and Methods

2.1. Research Design

This research was designed with the qualitative research approach. Qualitative research is an approach which researches and names social cases within their linked environment [38]. Eccles et al. [39]'s "Expectancy-Value Model" was used as a theoretical

framework of the study. This model was initially used to examine the effects of parents' behaviors and beliefs on children's math class. Accordingly, it is stated that children are affected by various factors in participating in any activity, and it is very important to examine especially parents' perspectives on activities. In the model, it is seen that parents have an expectation of success from their children according to their capacity. In addition, children's perceived abilities have an important place in terms of success. In this direction, the model can create an effective theoretical framework in order to understand the effects of parental influences on the participation of children with ASD in physical activity and sports. In line with the same model, Leung et al. [37] conducted a study examining parents' influence on the participation of children with typical development in physical activity and stated that the model can be associated with physical activity and participation in sports.

In this context, the research used the phenomenological pattern from qualitative research patterns. Phenomenological research investigates a person's lived experience and uses these experiences to investigate situations in depth [40]. At the same time, this research is about revealing the meaning of the acquired experiences [41]. In this context, an attempt was made to provide in-depth meaning to the parental influence in the journey of an individual with ASD beginning with physical activity and ending in sports throughout the process through the eyes of the individual themselves, their mother and sports coach.

2.2. Participants

For selection of participants in the research, the criteria sampling method from purposeful sampling methods was used. Criteria sampling involves review and investigation of "all situations meeting some previously determined significant criteria" [38]. Just as criteria may be created by the researcher, they may be determined according to previously-prepared criteria lists [42]. For selection of the study group, the researcher determined the criteria as an individual with the ASD diagnosis, who can express themselves at a certain level, participated in physical activity programs and a sport discipline for at least 2 years and has achieved success in this discipline. Within this framework, the study group included an individual who was 15 years old, had participated in physical activity programs for 6 years, had successfully participated in sporting activities in the athletics discipline for the last 4 years and achieved regional and national success in this discipline, and who had A-typical autism diagnosis included in the autism spectrum classification. Additionally, the study group included the 44-year-old mother of the individual with ASD, who continuously accompanied them on the route, beginning with physical activity continuing to championships, and the 27-year-old physical activity and sports coach of the individual with ASD. The coach included in the study group was certified in the athletics discipline, had graduated from a sports science faculty, and had been involved in projects with individuals with ASD for eight years. This study was structured in accordance with the principles of the 2008 Helsinki Declaration [43] with the aim of protecting privacy and confidentiality. The participants' names and surnames were concealed, with ethical rules noted by giving each participant a code name. 2. Materials and Methods

Table 1. Demographic information of participants.

No	Name	Age	Education	Profession
1	Mete (ASD individual)	14	Primary Education	Student
2	Damla (Mother)	44	Masters	Editor
3	Alper (Coach)	27	Undergraduate	Coach

2.3. Collection of Data

To gather data in the research, a personal information form was used with the aim of acquiring information about the participants' socio-demographic characteristics, and a semi-structured interview form was used to collect qualitative data. The following stages were followed during the process of preparing the semi-structured interview form.

- a) According to the theoretical framework and literature, certain topics were determined for interviews.
- b) A 14-item semi-structured interview form for the parent of the individual with ASD (mother), their coach and the individual themselves was prepared by the researcher within the scope of the research.
- c) The prepared form was examined by two experts, and their opinions about the form were expressed. One of the experts was an academic with experience of qualitative research methods and studies of individuals with ASD, and the other one was an academic qualified in the academic and implementation field with individuals with ASD.
- d) The final form of the prepared semi-structured interview form was prepared after satisfaction that a healthy interview process would be ensured, and participants were asked questions, including those presented as examples below.

Questions for parent (mother) and coach:

- What was effective in starting physical activity?
- What changes did you observe with the beginning of physical activity?
- What do you think were the factors affecting their transition to sports?

Questions for the individual with ASD:

- How did you start sports? Who brought you to sports?
- Do you like doing sports? Why?

Within the scope of the prepared semi-structured interview form, face-to-face interviews were held with the individual with autism, their mother and their coach. Interviews were held in an appropriate and quiet environment after the individuals' training time and the interview environment ensured the participants felt comfortable. Each interview lasted nearly 30 minutes and interviews were recorded on a voice recording device. The recordings were transferred to the computer environment without data loss.

2.4. Analysis of Data

The content analysis method was used to analyze data in the research. Content analysis is defined as efforts to create meaning by determining the basic topics and consistency in qualitative data [38]. According to Zhang and Wildemuth [44], the aim of content analysis is to determine important categories within the content and to provide a rich definition of the social reality created by these categories.

In this research, the stages completed during analysis of data are depicted in Fig. 1.

Within this scope, firstly recordings made with a recording device were listened to repeatedly and transferred to Microsoft Word program. In order to understand questions as a whole, the answers related to each interview question were written within the scope of participant opinions under each question. Data were read line-by-line by two researchers, coded separately and categorized. Condensed and irrelevant data were removed by comparing data read by both researchers and findings were obtained. In line with the findings obtained, interpretations were made by explaining cause-outcome relationships and relationships between findings and supported with example quotations.

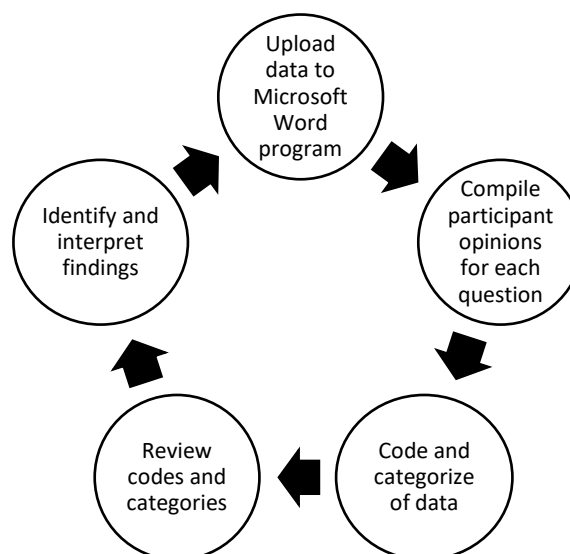


Fig. 1. Stages of data analysis.

2.5. Validity and Reliability

Qualitative research is dealt with differently to quantitative research. Validity and reliability concepts in qualitative research are expressed as credibility, transferability, consistency and verifiability [40, 45]. For these important concepts for validity and reliability of the research, credibility is equivalent to internal validity, transferability is equivalent to external validity, consistency is equivalent to internal reliability and verifiability is equivalent to internal reliability [42]. Within this scope, the following studies are presented.

Table 2. Studies related to credibility, transferability, consistency and verifiability.

Validity-reliability	Studies completed
Credibility (internal validity)	Research received expert opinions related to qualitative research, participant information is given in detail
Transferability (external validity)	Research method explains research pattern, participants, data gathering tools and analysis process in detail
Consistency (internal reliability)	Language and expressions used in the research are comprehensible. Research data was independently coded by two researchers and codes were compared to reach consensus.
Verifiability (internal reliability)	Miles and Huberman (1994) reliability formula was calculated (reliability = consensus / consensus + difference of opinion X 100), and the consistency was .82
	Dataset used in the research is held by the researcher

3. Results

In line with interviews completed with the parent (Damla, 44), coach (Alper, 27) and individual with ASD (Mete, 14) during the research, the findings are given in the categories of 'beginning', 'benefit' and 'success'.

3.1. Beginning

3.1.1. Beginning Physical Activity

In line with the participant parent's opinions, the factors affecting the individual with ASD beginning physical activity appear to be 'family', 'psychiatrist', and 'special education center'. Damla, stating that as a family each parent conducted much research in order for their children to receive correct education, mentioned several factors in directing Mete

toward physical activity. The first factor effective in beginning physical activity was the psychiatrist, expressed as follows by Damla:

We had a psychiatrist who followed my son since he was 2. Firstly, he informed us about 'physical activity programs just for people with autism', then we began to research programs. (Damla)

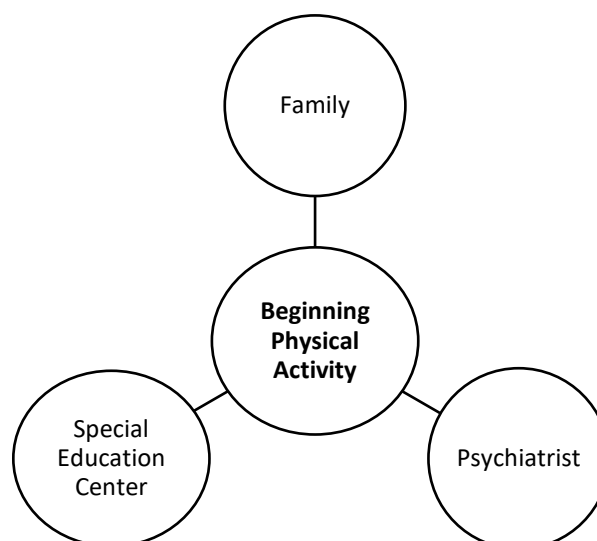


Fig. 2. Factors affecting physical activity initially.

Considering that in previous years the physical and motor development of children was delayed, and they were also inadequate in social terms, and that the program was for their children's needs, they registered with the program. Stating that this was the first time they participated in physical activity with a program, Damla's opinions of the Movement Education Program in the special education center were as follows:

My son began physical activity for the first time in a special program and in the movement education program of a special education organization. He participated regularly in physical activity through the movement education program since about the age of 5. We paid attention to regularly participate in these activities through the years. (Damla)

Meeting the individual with ASD through the physical activity program, coach Alper described the individual with ASD in that period:

In the period when he first started, he spoke little, was cute and was so skillful in what he did and the movements he was shown (...) He was very, very good, especially coordination and movements involving running. He was very willing and joyful. Whatever I wanted, whatever I explained he tried to do it as best he could. He stood out. (Alper)

When Mete's opinions related to the physical activity program are examined, he responded with this:

The first time my father brought me. I felt very happy there. I had friends, I loved my friends. I want him (father) to bring me there again. (Mete)

3.1.2. Beginning sport

Damla stated that over time her son's abilities came to the forefront within the physical activity program; she had never predicted her child could be successful at these types of activities or would orient towards sports, and communicated that the most effective factor in Mete beginning sport was the coaches.

The coaches all responded like 'this child is different, he's awesome and talented!' when my son was doing activities. We noticed that his visual memory was very developed. Physical activity was helpful in my son discovering this and similar abilities. We never predicted that

he could be successful in this type of activity or have talent for a sport. Up to that period, his muscles were very strong because he always walked on his toes, they said his jumping movements were functionally applied, like an athlete. In any case, he always ran about like a flea. He was always running, he didn't walk. We said, let's use this situation. In other words, the teachers directed him, but let's say this child had athletic talent. These types of children more easily compete in individual sports we said, so they directed us towards this discipline. (Damla)

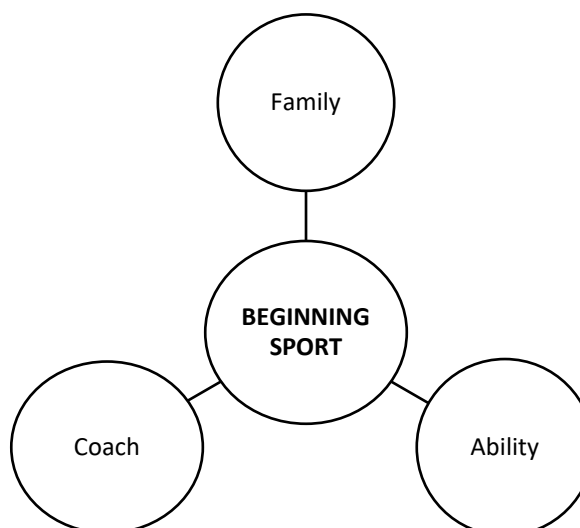


Fig. 3. Factors affecting beginning sport.

Included in Mete's journey from physical activity to sports from the very start to the present, coach Alper stated that Mete had many talents, that 'correct direction' was given by the family firstly, himself and other coach colleagues and that Mete's talent was evaluated in the best way, and a sportsperson was created.

There are disciplines that are easier to learn, have more opportunities. Athletics is one of these. Additionally, Mete had a predisposition. In athletics, there are some must-have requirements and movements that must be learned. Mete learned these in a very easy way. It requires speed, endurance. Most children can't provide these, Mete had nearly all of them. He took orders very easily and completed those orders too. (Alper)

It appears that coaches and family affected Mete's orientation toward athletics. However, in line with responses given by Mete to the question, he thought that the most important factors were his love of athletics and being successful.

I love the sport. I feel happy when I do sports. I love running most of all. I can run very fast. I'm the first in races. (Mete)

3.2. Benefit

3.2.1. Benefits of physical activity

As a result of participation in physical activity, Mete was identified to be positively affected. In line with the opinions of Damla, Alper and Mete, many benefits like 'healthy lifestyle', 'development of motor skills', 'reduced negative behavior', 'increased attention duration', 'awareness of responsibility' and 'socialization' were among findings from the interviews.

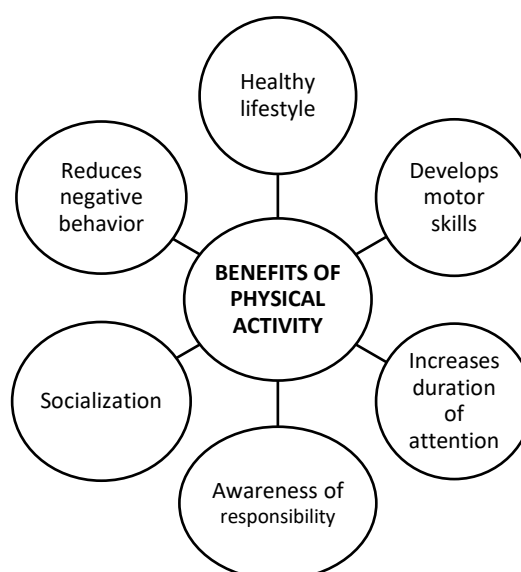


Fig. 4. Benefits of physical activity.

During the process following participation in physical activity, in spite of difficulties finding time for these activities and in a financial sense, Damla mentioned a lot of changes in their child. They experienced a reduction in negative behavior with physical activity; however, the most important was that their child moved outside his own world:

Of course, he was more comfortable at home by discharging energy during movements. Especially at home, but more adjusted in all environments, it created a calm and peaceful environment. Additionally, hope! This situation increased our hopes. There was always hope, there still is. We were very tired of course, both financially and spiritually, but we saw many more benefits. He gave his energy to other places, was interacting, there was no longer a situation of being closed in his inner world. With the beginning of speaking, problems began to reduce a little with each day. The child opened up. (Damla)

Damla, stating that she thought participation in physical activity had positive effects on her child's health, explained the other positive effects of physical activity on the child as follows:

Firstly, excess energy was discharged. It was very good for my son's intense behavior problems. He had many problems like not being able to socialize, not being able to communicate. In fact, in that period he couldn't speak. He talked for the first time after about 5 years of age. In that period, he didn't know his body. He had many clear motor problems like walking on his toes. He came to a good place through work and dedication to activities. We spent our weekends doing physical activity. We were very accustomed to this pattern. (Damla)

The coach emphasized inclusion in a social environment and thought that the physical activity program was effective in increasing Mete's attention span and awareness of responsibility.

I think it was mainly being in a social environment. I think group work with friends close to his level, sometimes races, supported his socialization. There's the health aspect too. If we say 'movement education', we implement very high tempo and tiring programs. Mete developed more as he did the program. In this way, he gained basic movement skills, strengthened, developed other motor skills. While doing all these, we were always talking to each other, we were communicating. Additionally, his attention increased, and I think attending every week created a sense of responsibility in Mete. (Alper)

Alper, stating that the individual with ASD was positively affected by well-developed two-way relationships, continued the interview with Mete given the nickname 'task man' as follows:

At the start of the program, he was positive and successful. During the continuation he worked on his potential and became more useful. His communication with friends increased, his relationship with me (coach) became more valuable to him, he began to perform the movements better. (Alper)

3.2.2. Benefits of Sport

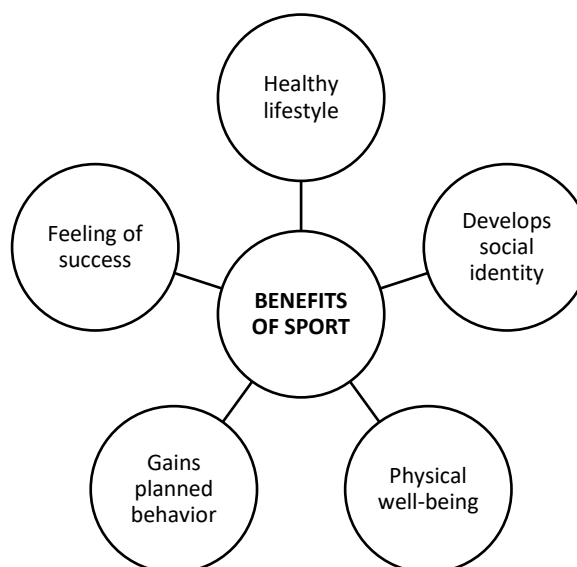


Fig. 5. Benefits of sport.

As a result of regular participation and dedication to physical activity, Mete became a successful sportsperson. As a result of interviews held with Mete himself, his mother and coach, sport was stated to provide benefits like creating a 'healthy lifestyle', similarly to physical activity. Additionally, the codes 'developing social identity', 'physical well-being', 'acquiring planning behavior' and 'feeling of success' were identified.

With the end of the physical activity program which continued for many years, Mete began to work individually with his coach Alper. In line with Alper's direction, he registered with a sports club and received a license for the discipline of athletics. Mete was also interested in swimming.

Damla, stating that her son had an intense program due to school, special education and training, mentioned that sport had great meaning for her son and provided positive effects in terms of health.

At the moment, he doesn't realize how important sport is for him because he's not in a situation to cognitively conceive of this, and he's also so busy. But in my opinion, sport has the most important place in his life. He's aware that sport keeps him healthier. Sometimes he says he's tired, I think all the coming-going, rushing about seems like a chore to him because he doesn't understand, but there's a positive outcome as a result. (Damla)

Mete was considered to gain a different character through sport and to perform sports for a variety of aims. His parent and coach support this view, considering that this character is actually a newly-created identity:

In other words, I think he chose to be a sportsperson. He determined his social identity as 'sports' or wanted to. Perhaps he was inadequate in relation to other topics, like mathematics. But just as he was overwhelmed by these, as he was successful in this type of sporting activity using his body, he appears to have entered a search in that area. (Damla)

Mete stated that sport makes him feel good and developed his physique and is pleased with this situation. With the phrase 'if we do sport, we will be strong', he understood what he could acquire from sport. Mete responded that he loves running, and coming to the athletics track makes him happy. In this situation, he observed that the most

effective factors were his love of his coach and obtaining success in races. Damla stated that her son won many medals from races and stated that her son was a 'champion' and that this was a source of self-confidence. Alper stated that Mete determines his own limits in terms of what he can achieve and continued:

Even when first beginning training, like at the start of the season, I get the answer 'We'll work hard, I'll go to races and I'll be champion!' every time. That's what motivates Mete. Mete began to understand why he does sports, for what reason. He thinks 'I'll be a sports person!', 'If I do my training, I'll win medals!', 'My friends will clap for me!', 'My family will be happy!' and is motivated. (Alper)

Similar to Alper's opinions, Mete expressed his feelings and why he does sports as follows:

When I do sport, I get excited. My target is to win the 200 meters. When I win, everyone says 'well done' to me. I win medals. I am happy. (Mete)

Considering that her son followed a very successful path within his discipline, Damla stated that her son was an example in this way and had even begun to make plans for the future.

In school, he's been included in projects related to sport and health for the last 2 years. He gives examples from his own life and success in these projects. He thinks like this, 'if I do sport, I will be healthier', 'if I do sport, I will be successful'. In terms of occupation, he says 'I want to do physical education!' in terms of his future wishes. At the moment he's at the end of middle school. I don't know, I think perhaps there will be an effect on his choice of profession in the future. When he starts high school, the future will become clearer, everything will gain more shape. (Damla)

In line with interviews, both his mother Damla and coach Alper stated that Mete had gained an identity as a sportsperson and that he was pleased with this. When his success continued, the importance of working in accordance with many factors was emphasized.

3.3. Success

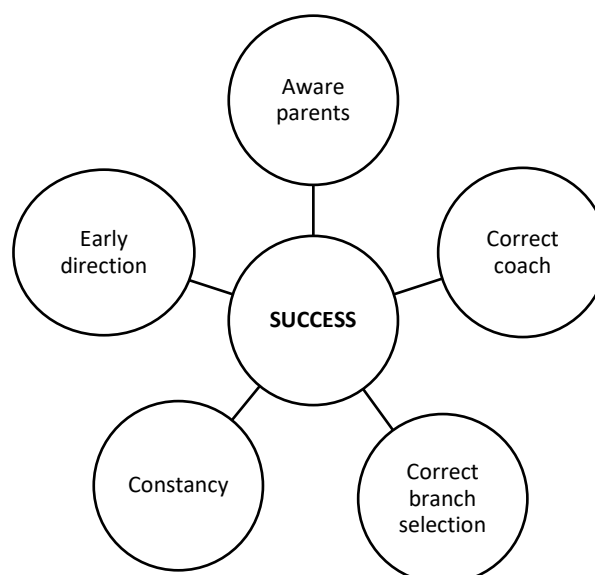


Fig. 6. Factors affecting success.

The final heading in our findings of 'success' focuses on how Mete achieved success on his journey from physical activity to sports and what factors played a role in this success. In line with the opinions of his parent and his coach, factors affecting success included 'aware parents', 'early direction', 'correct coach', 'correct choice of discipline' and 'constancy'.

Damla stated that she did all kinds of research in order for her children to receive good education and to develop themselves in the best way possible. Also mentioned that this attitude continued in relation to the topic of physical activity and sport. Damla stated that they were always with Mete and congratulated him on even the smallest development and that they tried to ensure he felt their support constantly. Damla explained their support for their child as follows:

We never flagged! Always, continuously we ensured he participated in programs and training. We said nothing about snow or winter, that work was too busy. With his father, we continuously supported him. Seeing him succeed was the greatest gift for us... (Damla)

His coach mentioned the place of his family in Mete's success and the positive effects of direction towards a sport at early ages.

The most important factor in being successful is the family. Another factor is his family directing Mete towards sports education at a young age. This is definitely very important. At the moment he takes what's given and explained very well and applies it, because there's very good movement training. (Alper)

His mother emphasized that his coach was another effective factor in success, who never lacked in support for Mete during his physical activity and sporting adventure. Damla stated that his coach was proud of Mete and ensured he felt that at every opportunity. According to Damla, coach Alper's contribution to her child's achievements cannot be denied. Hence, he worked with Mete's talents since the physical activity program and his areas of interest and ensured Mete oriented towards athletics. Due to this correct direction, Mete's mother stated that he had won more than 10 medals within the last few years.

In line with all these developments, sport created a positive effect on Mete, and family and coach appear to benefit from this situation. Contrary to the parents of many ASD children, Damla had a hopeful approach in terms of her child's future.

Of course, I want my son to have a different profession. But if we think of his discipline and sports identity, how good if he could get on the national team! For us, the greatest target is to enter the national team of the Special Sports federation. (Damla)

In terms of plans for the future, Alper's opinions were as follows:

In fact, if this child continues as he is, I think he's a child with the level to participate in European championships. I don't know about world class, but he's a child at that level. At the moment, I'm following Europe a little. In fact, Mete's a child who could do that in future years. If there was investment, he may enter the world class level, but there are many dimensions to that like time, space, effort. For that reason, if we continue to use the facilities at hand in the best way, it will be possible to participate in races in Europe. There he can participate and can win medals. (Alper)

4. Discussion

In line with the findings obtained in the research, the family factor was emphasized to be most important in the individual with ASD beginning physical activity. Obrusnikova and Cavalier [46] stated that family members allocating adequate time to the individual with ASD had positive effect on participation in physical activity. There are similarities to the research by Gürkan and Koçak [5] stating that supportive and motivating parents were an important factor in individuals with ASD participating in physical activity. Child psychiatrists were encountered as another effective factor in beginning physical activity, and it was concluded that they played an important role in directing the family toward physical activity.

The final factor affecting beginning physical activity was encountered as special education centers. Special education organizations support participation in physical activity and host special programs about this topic. In this situation, the choice of inclusion of

physical activities in special education centers and the effect of added privilege in special education organizations can be mentioned. Sorensen and Zarrett [47] stated that special education centers and coaches had critical importance in communicating the benefits of individually-adapted programs considering the positive effects of physical activity for ASD individuals. In line with this, it can be said the special education center in this research was a significant factor in beginning physical activity.

In the research, some factors affected the individual with ASD orienting toward athletics after physical activity programs. Just as when beginning physical activity, in beginning sport the effect of the family factor is observed. Karakaş and Yaman [48] concluded that parents had a great effect on children with special needs orienting towards sport, and that children's participation occurred with their support. It was stated that the perspective of the family about sport plays an important role in children with normal development beginning sport [49]. In line with this, the literature is compatible with the results of our research.

Another important factor for the individual with ASD on the journey from physical activity to sport was the coach. The coach was effective in discovering the individual's talent and training them, and directing them to an appropriate sport discipline. May et al. [50] stated that a good coach may play an important role in developing physical skills of children and in the critical process as they transition to sport. Coaches need to understand and recognize the needs of individuals with ASD. The skill of the coach in determining these needs will ensure that each individual with ASD has the opportunity to focus on their strong and weak aspects and this will ensure understanding and development of the individual's skill level in a certain sport in the end [12]. In our research, the coach provided significant contribution to the individual with ASD directing towards athletics and being successful.

The contributions of the family and coach cannot be ignored; however, one of the basic factors in the journey of the individual in athletics is the talent in the relevant sports discipline of the individual with ASD. Though individuals with ASD may not have adequate skills in one topic, they may be very talented in another [51]. It is thought that by developing skills, ASD individuals may have an increased opportunity to perform activities with their peers with normal development. Though the ASD individual included in the research had a variety of social and communication problems, his sporting talent gave his life a different direction.

In line with the findings obtained in the research, the benefits of physical activity and sport for the individual with ASD were mentioned. In the research, participation in physical activity was effective in the ASD individual acquiring a healthy lifestyle as a result of the interviews. Strong et al. [23] expressed the importance of participation in physical activity in terms of individuals with ASD who face a variety of health problems and have an immobile lifestyle. Especially considering that diabetes, obesity and cardiovascular disorders are frequently observed in individuals with ASD [3], there are studies stating that participation in physical activity will ensure individuals benefit best both in terms of physiological and psychological health [22].

Regular participation in physical activity became routine for the individual with ASD and it was concluded that attending the physical activity program on certain days stimulated a sense of responsibility in the individual. Additionally, it is known that participation in physical activity may lead to reductions in negative behavior like introversion or aggression among individuals with ASD [20, 21]. In this research, reductions in repeated behavior and unwanted behavior by the ASD individual emerged when the findings are investigated. For this, the increase in the individual's attention span was effective; attention span was developed by participating in activities, and this situation is thought to have benefitted the individual. Obrusnikova and Miccinello [52] stated that concentration/attention span increases as a result of participation in studies investigating the effects of participation in physical activity on individuals with ASD, concluding similar results as our study.

Group work and collective activities are included within the structure of activities like physical activity. The ASD individual included in the research participated in a physical activity program comprising 12 people. Due to this program, the individual with ASD socialized, as revealed by interviews with his mother and his coach. Rosso [4] stated that individuals with ASD distanced themselves from social environments due to communication inadequacy and avoiding communication. Studies observed that participation in physical activity is an important tool in terms of socialization by inclusion in collective activities and in being able to better express themselves in society [5, 2, 52, 21, 53].

In line with the findings, another benefit was positive effects on the motor development of the individual. Must et al. [2] stated that individuals with ASD generally experience motor delays. This situation is observed to be a problem for ASD individuals in general [5], and it appears there are studies about the opportunity to improve this with activities like physical activity [19]. Whitehead [11] stated that participation in physical activity at a young age provided significant benefits for basic movement skills and motor development and formed the basis of future sporting activity. Duquette et al. [7] stated that physical activity was the foundation for beginning sport.

It was concluded that as a continuation of the physical activity process, the individual with ASD oriented toward sport and was interested in athletics. Performing sport appeared to provide many benefits for the ASD individual. Like participation in physical activity, participation in sports was found to help individuals acquire a healthy lifestyle [54]. It was stated that special needs individuals who play sports gain a more resistant and stronger physical structure. In our research, owing to sport, the individual with ASD developed his physique, as expressed by the participants and the individual himself. In line with good appearance in physical terms and success obtained in races, the individual with ASD began to see himself as a 'sports person', and as a result, this perspective was created in those around him. The ASD individual began to act with his sports person identity in social environments as seen in the findings. Doubt and McColl [55] stated that having a sports identity was an attractive feature compared to other peers, especially in the adolescent period. The development of a sporting identity is thought to directly affect individuals with special needs [56].

When the ASD individual began sports, he appeared to create a view of the future and to make plans about his career and for after sports. When the literature is investigated, ASD individuals have weak planning abilities, and the very low number of studies in this field is notable. However, in our research, the inclusion of the ASD individual in sports and success obtained in this field are thought to have developed his planning ability and he made a variety of plans. Though individuals with ASD have weak planning skills, they can be developed as proven by a variety of studies [57], which confirms this result of our research.

Competition and reaching expected targets are included in the nature of sport. Of course, all sportspeople want to be successful and achieve their targets [58]. The feeling of success is at the basis of sport, and sport appears to be a platform where there can be improvement; a new identity and success can be acquired, especially for individuals with special needs [59]. The races and medals won by the examined ASD individual in his sports discipline was stated to give him a taste of the feeling of success, and this situation is thought to provide significant benefit in increasing the individual's motivation for sport.

The journey from physical activity to sport of the individual with ASD can be said to be generally successful. In line with the findings, aware parents were included among factors affecting this success. Parents who research programs for their children and find the most appropriate one also provide all types of financial and spiritual opportunities for their children. They ensured the individual with ASD constantly attended both the physical activity program and training for his discipline over many years. In the literature, aware and supportive family members were shown to be effective in ASD individuals being physically active [5, 52, 21]. In addition to an aware family, the most important

factor appears to be the coach. A coach who analyzed the talent and capacity of the ASD individual well played a very important role in the ASD individual being successful in sport. Ohrberg [12] stated that the degree to which a coach knows the features of the ASD sportsperson is the degree to which the sportsperson will be successful and develop in the sport. It is stated that whether the individual's own talent and capacity are suitable for success or not is a factor that cannot be ignored [33]. From this aspect, directing the ASD individual toward the correct discipline at the correct time is encountered as other factors effective in his success.

5. Conclusions

In conclusion, it appears that the family, psychiatrist and special education centers were effective in the individuals with ASD in beginning physical activity, and that the individual's family, coach and skills emerged in his beginning sport and that physical activity and sports provided many physiological, psychological and social benefits. Additionally, elements like aware parents, correct discipline selection and early direction came to the forefront in the success of the individual with ASD.

It is seen that parents' influences on physical activity and sports affect their child's perspectives on this situation. It has been concluded that the family influence is effective in both titles in terms of their child starting/continuing physical activity and sports. Being aware of the child's capacity, and most importantly, seeing and supporting this capacity by the family has played an important role in achieving success.

With this study, it is understood how effective the parents are in the participation of their children with ASD in physical activity and sports, and it can be said that the individual earns a more positive attitude according to the benefits obtained. In this direction, it is recommended in our research that parents direct their children with ASD to physical activity programs and support them. In addition, conducting various studies on different samples and disability groups on this subject will be effective in terms of contributing to the field.

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