

Examining the Opinions of Mothers Who Have Children Diagnosed with Autism Spectrum Disorder (ASD) on Outdoor Practices

Ezgi Emine Olaş¹ Esra Betül Kölemen²

1.Sakarya University Faculty of Education in Turkey, eminezgiolas@gmail.com

2.Sakarya University Faculty of Education in Turkey, menevse@sakarya.edu.tr

Abstract

Outdoor activities are a need for children. This need is felt more in children diagnosed with ASD. These children's limited eye contact, avoidance of physical interaction, and inability to adapt to the rules of social life limit their participation in outdoor activities. From this point of view, this study aimed to examine the views of mothers who have children diagnosed with ASD on outdoor practices. The participants consisted of 13 mothers with children diagnosed with ASD in a special education kindergarten affiliated to the Ministry of National Education in Adapazarı district of Sakarya province in the 2022-2023 academic year. Data were collected using Demographic Information Form and Semi-structured Parent Interview Form, which was prepared by the researcher and received expert opinion. According to the results of the research mothers with higher levels of education stated that they want their children with ASD to be active in outdoor activities in all weather conditions, as long as they are dressed appropriately. On the other hand, mothers with lower levels of education stated that they should not take their children out too much in bad weather because they would get sick and that shopping malls and parks are more effective in the socialization of children and that these areas are more crowded.

Keywords: Outdoor Education, Autism Spectrum Disorder, Early Childhood Education.

Introduction

Children are born with the desire to explore the world around them by trying to learn the situations that take place around them (Civelek & OzyılmazAkamca, 2018). They observe the environment quite a lot with a spontaneous desire and need the materials to engage (Sinan & Yerli, 2019). While all this is happening, they may have to face a set of situations and sudden events that are difficult to accept during their lifetime. One of the events they are likely to face (Sağlam Tekir, 2015) is autism spectrum disorder, a demographic group that is particularly underrepresented in the literature and excluded as participants (Fahy et al., 2021). Autism spectrum disorder (ASD) is a disability characterized by restricted, repetitive behaviors, interests or activities with inadequacy in social communication and interaction that emerges in the early life period (American Psychiatric Association, 2013). The exact cause of ASD is unknown, and according to 2020 data from the US Centers for Disease Control and Prevention (CDC), the prevalence rate is approximately one in every 36 children. ASD is a developmental disability that affects a child's social skills and behavior (American Academy of Pediatrics, 2023). It is also a neurodevelopmental disorder characterized by impaired language skills, limited interests (Xie et al., 2022), and restricted and repetitive behaviors (Zachor et al., 2017). In the DSM-IV-TR, the Diagnostic and Statistical Manual of Mental Disorders (Tooper, 2022) published by the American Psychiatric Association (APA), which is used in the diagnosis and classification of ASD (Yılmaz, 2019), autistic disorder is expressed as Asperger's Disorder and Pervasive Developmental Disorder (PDD) that cannot be otherwise specified. In the updated DSM-V, the term Autism Spectrum Disorder was used (Kaba & Soykan Aysev, 2019).

Research shows that observable behaviors related to ASD can emerge in the first year of life and can be seen concretely towards the end of the second year. It should be noted that it is not qualified to explain ASD only by the fact that the child experiences deficiencies in holistic development compared to his/her peers (Mitchell et al., 2011). Moreover, in identifying these behaviors with early intervention, it is necessary to know that not all children with ASD have all the symptoms (Hume et al., 2020). Behavioral problems commonly encountered in children with ASD include self-harm, tantrums, escape behavior, sleep problems (Tooper, 2022), and feeding problems that

occur with being affected by the appearance, taste or texture of food (Emond et al., 2010). They also differ from their normally developing peers in language and speech skills (Canpolat Çığ & Diken, 2022). The majority of children with ASD have intellectual disability, and it is frequently observed that they have difficulties in initiating and maintaining joint attention (Orum Cattık, 2022). This situation causes children with ASD to have negative effects on concept learning, phonological awareness skills, mathematics and academic skills in early childhood (Toret&Ozmen, 2016). While the majority of children show these problems because they do not have options to express themselves, some of them consciously show these behaviors in order to get what they want more easily (Tooper, 2022). It is an undeniable fact that children diagnosed with ASD, as well as children with normal development, need to move and outdoor spaces for their healthy development (Geney et al., 2019). Children can interact anywhere, but they need more qualified spaces to fully explore themselves. For this reason, outdoor spaces that offer a more comfortable movement environment (Yıldırım, 2017) can provide children with the opportunity to exhibit their psychological, emotional and physical characteristics and at the same time learn by doing (Turgut & Yılmaz, 2010). The aim of outdoor activities is to provide children with out-of-class educational experiences that involve direct contact with various environments (Palmberg & Kuru, 2000), and these experiences are also very important for developing children's social and emotional skills (Yılmaz, 2016). While the benefits of outdoor learning are increasingly recognized (Dyment, 2005), opportunities for outdoor activities are significantly overlooked (Blake et al., 2018) and not seen as a priority (Jidovtseff et al., 2021). Froebel named the first kindergarten he established in Germany as a children's garden (kindergarten) and attached great importance to both indoor and outdoor spaces as learning environments (Yalcın& Erden, 2022). According to Civelek and Uyanık (2020), outdoor learning, which is a piece of the educational puzzle, is as important as indoor learning. Thus, learning does not always take place indoors; museums, zoos, botanical gardens, water parks, playgrounds, forests and rivers, (Yıldırım & ÖzyılmazAkamca, 2017) grassy areas where children can run and play, roads with hard surfaces where they can ride their bicycles, floors with different materials such as gravel and soil, sandboxes and water pools that can be used in suitable weather; various earth mounds, a small outdoor theater if possible, climbing nets (Kaya & Ulusoy, 2018) are considered free spaces (Guzelyurt&Ozkan, 2018). Generally, outdoor experiences involve the nature (Mcclintic& Petty, 2015). Therefore, children need such playgrounds and green spaces (Fjørtoft & Sageie, 2000).

While outdoor space is very important for typically developing children, it is equally important and valuable for children with ASD. However, there is limited research on the experiences of children with ASD in the outdoors, and they face particular challenges in terms of access, inclusion and participation in play (Blake et al., 2018). It is known that many children with ASD are socially isolated, do not engage in social play and very few initiate social interactions with peers (Ziegler & Morrier, 2022). The outdoors has great potential as an educational resource and can make a wide range of contributions for children diagnosed with ASD (O'Brien, 2009). It can be said that children's ability to play and participate in social play has positive effects on their attention and motor skills (Fjørtoft, I., & Sageie, J. 2000) and offers them the opportunity to get to know themselves and their environment through their senses (Yıldırım & ÖzyılmazAkamca, 2017).

Studies on the role of parents in outdoor practices are very limited in the literature (Ata, 2016). Jayasuriya et al. (2016) concluded that parents want their children to spend more time in outdoor spaces. Other studies have shown that although parents think that outdoor activities contribute to development, they have some concerns about it (Michek et al., 2015; Jayasuriya et al., 2016). For example, Kalburan (2014) concluded that parents' concerns about safety are one of the obstacles that limit outdoor practices (Kandemir, 2020). In addition, Yılmaz (2016) and Kalburan (2014) found in their studies that parents have limited time to spend outdoors and lack of energy, which limit outdoor practices. Furthermore, Alat et al. (2012) found that parents living in an isolated environment in the concrete buildings of modern life have an urge to protect their children from natural elements such as "dirt, mud, insects, animals, rain and snow". This also supports the safety concerns of parents. Based on this, it is not enough to only examine the opinions of teachers in order to enrich the time spent outdoors. It can be said that the concerns and opinions of mothers who have children diagnosed with ASD about outdoor education also affect the practices at school (Kandemir, 2020). Thus, in this study,

it was aimed to determine the opinions of mothers who have children diagnosed with ASD and attending a Special Education Kindergarten in Sakarya about outdoor practices.

For this purpose, this study sought answers to the following questions.

1. What are the opinions of parents about outdoor practices?
2. What are the outdoor environments that parents frequently prefer for their children? Why do they prefer these environments?
3. What are the types of activities that parents do in the outdoor environments they frequently prefer for their children?
4. What are the opinions of parents about the outdoor activities provided to their children at school?
5. What are the expectations of parents from the school or teachers in outdoor activities provided to their children at school?

Method

Research Model

Phenomenological approach, as one of the qualitative research methods, was used in the study. According to Cropley (2002), phenomenology is a preferred design for focusing on situations that are recognized but do not have an in-depth understanding (Büyüköztürk et al., 2022). In this study, phenomenological design was preferred to provide in-depth information about the views of mothers who have children with ASD on outdoor practices.

Sample

The participants consisted of 13 mothers who have children diagnosed with ASD in a special education kindergarten affiliated to the Ministry of National Education in Adapazarı district of Sakarya province in the 2022-2023 academic year. "Criterion sampling method, which is one of the purposive sampling methods" was used to determine the study group. The main purpose of the criterion sampling method is to select a sample that meets a set of predetermined criteria (Yıldırım & Şimşek, 2011). The selection criterion was that the mothers had a child diagnosed with ASD.

Table 1 Demographic information of mothers

		Frequency (n)	Percentage (%)
Age	20-30	1	7,6
	31-40	8	61,5
	41+	4	30,7
Marital Status	Married	12	92,5
	Single	1	7,6
Education Level	Primary School	4	30,7
	Middle School	3	23,7
	High School	2	15,38
	University	4	30,7
Employment Status	Yes	-	
	No	13	100

As can be seen in Table 1, 61.5% of the participants are between 31-40 years of age, 30.7% are 41 years of age or older, and 7.6% are between 20-30 years of age. Considering the marital status of the participants, it is seen that the majority of them, 92.5%, are married, while 7.6% are single. According to the educational status of the participants, it is seen that 30.7% are primary school graduates, 30.7% are university graduates, 23.7% are middle school graduates and 15.38% are high school graduates. None of the participants were working.

Table 2 Demographic information of children

		Frequency (n)	Percentage (%)
Gender	Girl	1	7,6
	Boy	12	92,30

Age	36-48months	4	30,76
	49-60months	6	46,15
	61-72months	3	23,7
Number of siblings	0	2	15,38
	1	6	46,15
	2+	5	38,46
Diagnosis	Atypical Autism	6	46,15
	Autism spectrum disorder	3	23,7
	Childhood Autism	1	7,6
	Mild autism	3	23,7
Date of diagnosis	2020	2	15,38
	2021	7	53,84
	2022	4	30,76

As can be seen in Table 2, 92.30% of the children were boys and 7.6% were girls. When the age ranges are analyzed, it is seen that 46.15% of the children are between 49-60 months, 30.76% are between 36-48 months, and 23.7% are between 61-72 months. Regarding the number of siblings, the majority (46.5%) had only one sibling, 38.46% had two or more siblings, and 15.38% had no siblings. Considering the diagnoses of the children, most of the children (46.15%) were diagnosed with atypical autism, 23.7% were diagnosed with autism spectrum disorder, 23.7% were diagnosed with mild autism, and 7.6% were diagnosed with childhood autism. Considering the dates of diagnosis, it was observed that 53.84% were diagnosed in 2021, 30.76% were diagnosed in 2022, and 15.38% were diagnosed in 2020.

Data Collection Tools

"Demographic Information Form" and "Semi-structured Parent Interview Form" prepared by the researchers were used as data collection tools. The interview form was presented to four field experts, including two preschool, one special education and one measurement and evaluation experts. Based on the feedback from the experts, the "Semi-structured Parent Interview Form" was revised and edited by the researchers. This form consists of 5 open-ended questions. As a result of the pilot study, taking into account the weather conditions on the day of the interview, the researchers asked one additional open-ended question ("It's cool and slightly rainy at the moment, can your child go out in the schoolyard? So, can he/she go out when it snows?") was included in the study.

Data Collection

In this study, a series of steps were taken to collect the data. First, the ethics committee documents on the Sakarya University institute page were filled in and submitted to the ethics committee and the necessary permissions were obtained. Before starting the data collection process, a pilot study was conducted with two mothers (to determine the factors such as fluency, duration, incomprehension of interview questions, etc.). As a result of the pilot study, no questions were changed in the interview form. The schools where the data would be collected were determined and permission was requested from the principals of the schools. In line with the permissions received, the school principal went to the special education kindergarten on a predetermined Wednesday and introduced the researcher to the mothers. Afterwards, it was decided that the principal's office was suitable for the interview (in terms of coolness, light, noise, etc.) and only the mothers of children diagnosed with ASD who wanted to participate voluntarily were called to the room one by one. After a brief greeting, the mothers were verbally asked for permission for voice recording and the interviews lasted approximately 8-10 minutes. Eight parents were interviewed on the first day, and the interviews were terminated as it was time for lunch break. On the following Monday, the school was visited again and four more parents were interviewed. The interview started with demographic questions first for the mother and then for the child. Afterwards, the interview questions prepared by the researchers were audio-recorded and the interview was finalized. On the day of the main interview, the weather was cool and rainy. Therefore, when all the questions were finished, the mothers were asked an additional improvised question, as "Now that the weather is cool and slightly rainy, can your child go out in the schoolyard? And can

he/she go out when it snows?". At the end of the interviews, the audio recordings were listened to and the answers were transcribed online and shared with the other researcher. The coding was done by the researchers in separate places and the names of the participants were given as A1, A2.....A13 respectively.

Data Analysis

The results were analyzed using content analysis. In the analysis of the data, similar features were transformed into themes/ codes. The incidence of the data was expressed as frequency. All data were analyzed based on the research questions.

Validity and Reliability

The validity and reliability of the data obtained is important for the scientific nature of the study. For this reason, different methods were used to ensure the reliability and validity of the data. In qualitative data, codes and themes were created by two experts to reduce researcher bias and to ensure internal validity (Miles & Huberman, 1994).

Results

In this section, the research questions are examined in detail.

Mothers' Descriptions of Outdoor Practices

The mothers were asked the question "What comes to your mind when you think of outdoor practices?" and were asked to define this concept. Other answers given by the mothers to this question are presented in Figure 1.

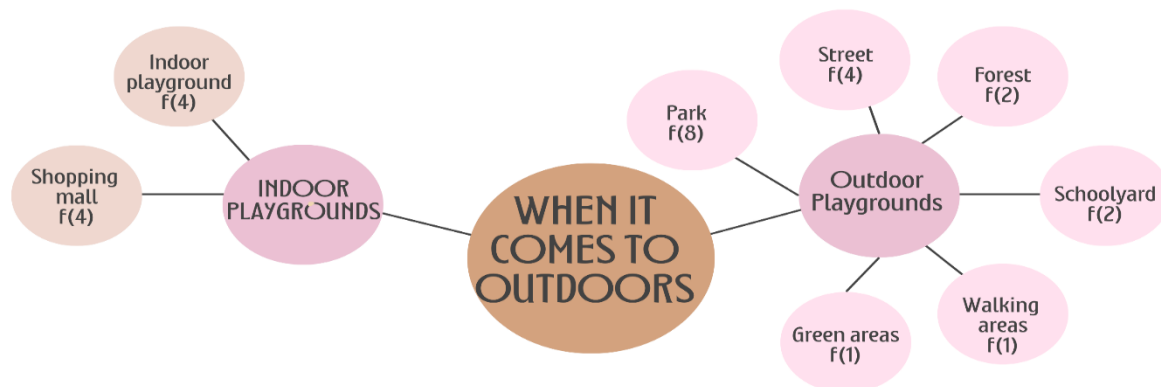


Fig. 1 Model of responses to the question "when it comes to outdoor practices"

Mothers expressed their views on the question of what do you understand when it comes to outdoor practices as follows;

A2: "Parks, walking areas, playing outside. For me, it actually means the problems of children with autism. Because we are excluded in every sense and we have difficulty in benefiting from outdoor practices."

A9: "I understand spending time outdoors."

A12: "I think of explorations in the forest."

When asked what do you understand when it comes to outdoor practices, mothers expressed their opinions as playgrounds, shopping malls, parks, streets, forests, school gardens, walking areas, and green areas. When Figure 1 is examined, it is seen that the highest frequency of the practices that come to mind for outdoor is the park (f=8). The other highest frequencies were streets (f=4), playgrounds (f=4), and shopping malls (f=4).

Eight mothers were asked the additional question "It's cool and slightly rainy at the moment, can your child go out in the schoolyard? So, can he/she go out when it snows?". They expressed their views on the question as follows;

A6: "If there are no symptoms of illness, of course. He can get dirty, he can play with water."

A9: "No, sir, he will get sick. His immunity drops. This time he will fall behind in classes. I don't want him to go out if it is cold."

A13: "Yes. If he is not going to stay for a very long time, he can go out, because he has almost never gone out."

When the opinions are analyzed, it is seen that the majority of the respondents answered "yes" (f=6), while the remaining respondents answered "no" (f=2).

Outdoor Environments Where Mothers Take Their Children and Reasons for Going to These Environments

The mothers were asked the question "Which outdoor environments do you take your child to and why?". The responses of the mothers to this question are presented in Figure 2.

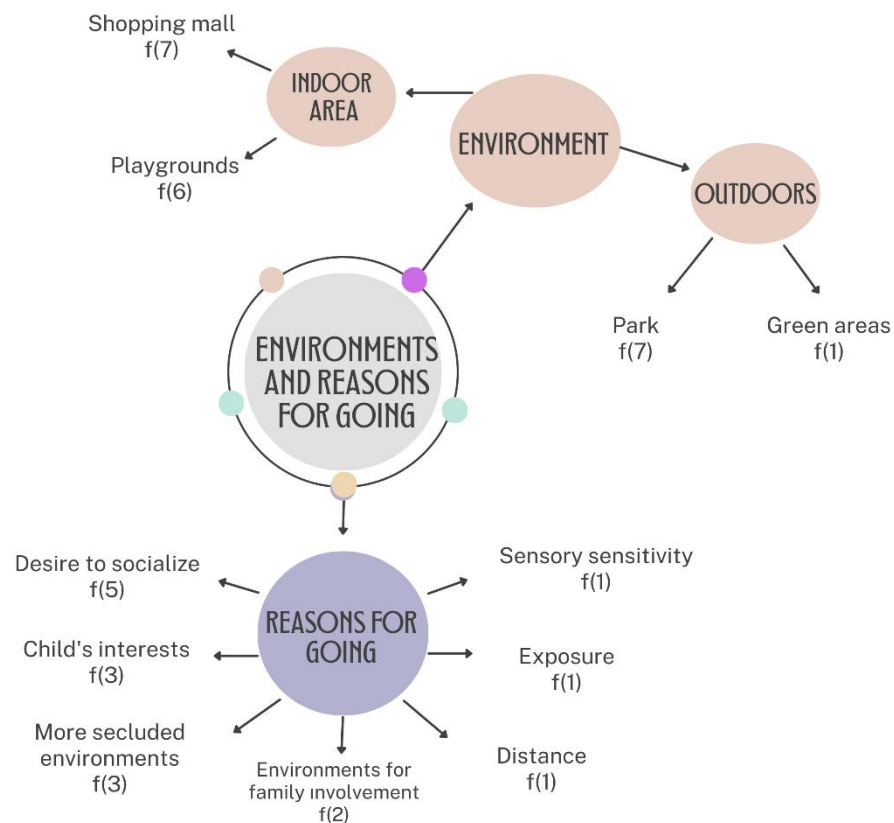


Fig. 2 Model of environments where mothers take their children and reasons for going there

The opinions of the mothers regarding the question "Which outdoor environments do you take your children to and why?" are as follows;

A5: "Shopping mall, playgrounds, park. For him to integrate (socialize) with his peers."

A10: "We usually go to the park. I support him in areas where he is afraid to walk."

A13: "He loves the park very much. We often go to the playgrounds in the shopping mall. Because we can reach them more easily."

When considering the opinions of the mothers regarding the question "Which outdoor environments do you take your children to and why?", it is seen that the most preferred indoor

environment is shopping malls (f=7), while the most preferred outdoor environment is parks (f=7). Whereas the most prominent reason for going is the desire to socialize (f=5), children's interest (f=3) and more secluded environments (f=3) are also important among the reasons for going.

Activities that Mothers Do with Their Children in Outdoor Environments

The mothers were asked the question "Which activities do you often do with your child in outdoor environments?". The responses of the mothers to this question are presented in Figure 3.

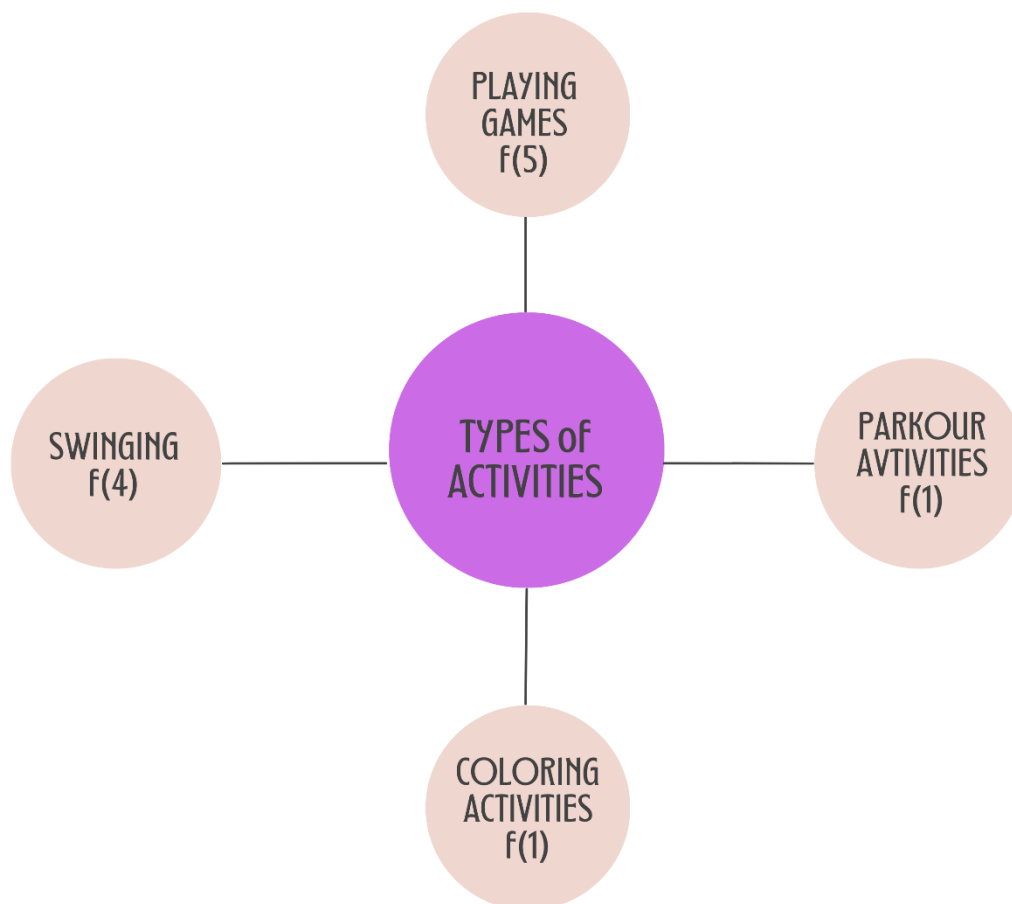


Fig. 3 Model of the Types of Activities that Mothers Frequently Prefer for Their Children in Outdoor Environments

Mothers' opinions on the activities they frequently prefer for their children in outdoor environments are as follows;

A6: "We even ride the swings together; I even go down the small slides with him."

A8: "We play games, we put him in contact with new people."

A13: "He usually does activities by himself, we watch him."

When the opinions of the mothers regarding the question "Which activities do you often do with your child in outdoor environments?" were analyzed, it was seen that they often played games (f=5). However, swinging (f=4) was another most preferred activity to do together.

Mothers' Opinions on Outdoor Activities Provided to Their Children at School

The mothers were asked the question "What are your opinions about the outdoor activities provided to your child at school?". The responses of the mothers to this question are presented in Figure 4.

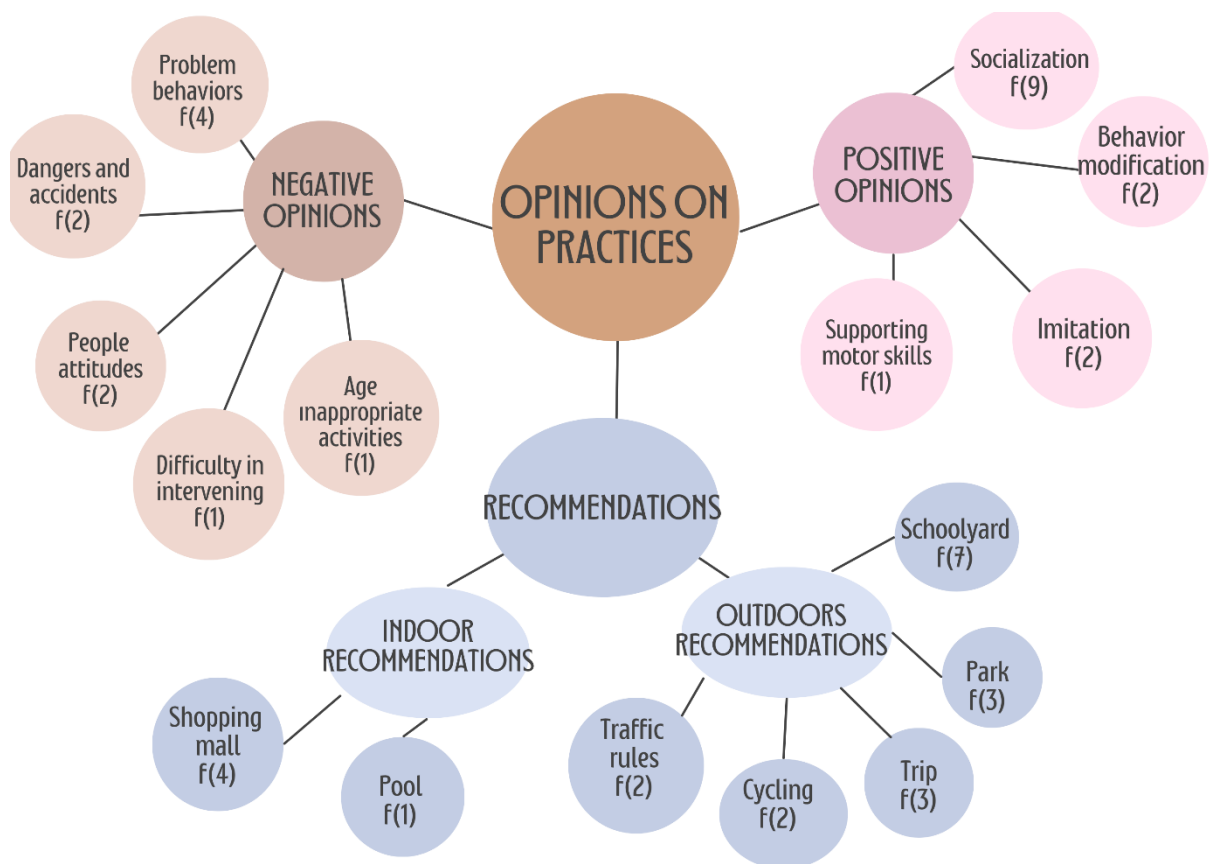


Fig. 4 Model of mothers' opinions on outdoor activities provided to their children at school

Mothers' opinions on the outdoor activities provided to their children at school are as follows;

A2: "I definitely think it is a good thing in terms of socialization. People's gaze. For those who don't know, people will find it strange in a problem behavior that may occur outside. I would like them to ride a bicycle."

A6: "It helps him socialize a little bit. My son would not enter any environment, now when children run, he runs too. The fact that my child would involuntarily move away from that environment due to inconsiderate people would also have a negative effect on him. There should be more activities for special children, they can also go on trips."

A10: "It can be a trouble for children with a lot of problem behaviors. Different areas can be difficult for children with a routine. The teacher may have difficulty in establishing control alone. I would like the school garden to become more efficient."

When the opinions of the mothers regarding the question "What are your opinions about the outdoor activities provided to your children at school?" are examined, it is seen that problem behaviors (f=4) are seen as a negative opinion, while socialization (f=9) is seen as a positive opinion. In addition, when the suggestions were examined in two different categories, indoor and outdoor, it was seen that the shopping mall came to the fore with 4 people among indoor suggestions and the school garden came to the fore with 7 people among outdoor suggestions.

Parents' Expectations from Schools or Teachers in Outdoor Activities Provided to Their Children at School

The mothers were asked the question "What are your expectations from the school or teachers in outdoor activities provided to your child at school?". The answers given by the mothers regarding this question are presented in Figure 5.

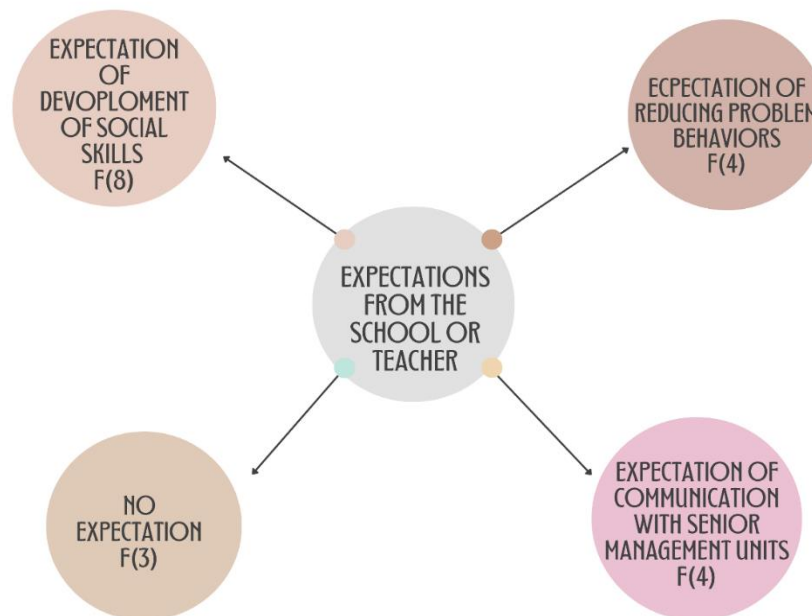


Fig.5 Model of expectations of mothers from schools or teachers for outdoor activities

The opinions of mothers regarding their expectations from schools or teachers for outdoor activities are as follows:

A1: "I would like to see all the practices that every child with normal development can do. Teachers have a very difficult job, there is not just one child. Therefore, it is difficult for teachers to cope. Honestly, I don't have much expectation."

A4: "When it snows, they can build snowmen, skateboard, ride bicycles. I would like the school and teachers to make the children do everything they can do."

A10: "The school can organize an activity every week. I would like municipalities to be consulted for costly practices. Because due to the cost, outdoor practices are not done and remain incomplete."

When the opinions of the mothers regarding the question "What are your expectations from the school or teachers regarding outdoor practices?" are examined, it is seen that social skills expectations ($f=8$) are quite high. However, expectation of reducing problem behaviors and communication with senior management ($f=4$) is demanded at the same rate, while 3 mothers have no expectations.

Discussion and Conclusion

This study was conducted to examine the views of mothers who have children diagnosed with ASD attending a special education kindergarten about outdoor space. Outdoor space, which is the main subject of the study, plays a role in supporting children's development in all areas because it provides an opportunity for children to move freely (Rivkin, 1997). Nowadays, attitudes towards the outdoors are rapidly growing both domestically and internationally. Sjöblom (2021) concluded in his study that "in recent years, interest in outdoor learning has been increasing rapidly", while Aşkar (2021) stated that the importance of spending time outdoors has also increased in the education sector. The findings of this study shed light on the opinions and suggestions of mothers who have children diagnosed with ASD regarding the outdoor space and deepen the discussions on the subject.

Within the scope of the first sub-problem of the study, "What comes to your mind when you think of outdoor practices?", it is seen that the mothers in the study group mostly said "indoor playgrounds and parks". Apart from these, there are also answers such as shopping malls, streets, forests and school gardens. Remmen & Iversen (2022) state in their study that outdoor applications can be many environments outside the school. Yıldırım & Özyılmaz Akamca (2017) also stated in their study that learning can take place not only in the classroom but also in outdoors. These findings support mothers' opinions on outdoor practices.

Within the scope of the second sub-problem of the study, "Which outdoor environments do you take your child to and why?", it is seen that mothers mostly prefer "shopping mall" as an indoor area and "park" as an outdoor area. Sizhan (2022) examined parents' views on outdoor play opportunities in the development of their children. He reached a similar conclusion to this study and found that the most preferred choice was the playground in the neighborhood. In this study, when the reasons for going to outdoor environments are examined, it is seen that the desire for "socialization" is at the forefront. In Küçün's (2022) study, outdoor spaces were defined as places that are larger than indoor spaces, where more people can be together, and which also include socialization. Therefore, it is not unexpected that the reason why mothers prefer outdoor spaces is mostly the desire to socialize. These results are also consistent with the findings of Kandır & Alpan (2008) that social emotional development is very important in children and should be supported, and that one of the most important tools for this is activities in outdoors. Alat et al. (2012), in a study conducted with parents of children with normal development, found that parents did not give enough opportunity for outdoor play. However, in this study, parents who had children diagnosed with ASD stated that they were selective when choosing a place because of people's gaze, that they chose secluded areas, and that they used the existing opportunities for the socialization of their children as much as possible. In contrast to the results of this study, Mart (2021) found that participant parents preferred indoor activities.

Within the scope of the third sub-problem of the study, "Which activities do you often do with your child in outdoor environments", mothers frequently stated "playing games (individually) and swinging". Among the findings, it was observed that children mostly did activities individually and mothers remained in the role of observers. The findings of Syrjämäki (2023) study, on the other hand, showed that autistic children were mostly involved in adult-supported play situations. Must et al. (2015) also found that 60% of parents of children with ASD reported that the child needed "too much" supervision and that this was a barrier to physical activity.

Within the scope of the fourth sub-problem of the study, "What are your opinions about the outdoor activities provided to your child at school?", mothers stated "problematic behaviors" as a negative opinion and "socialization" as a positive opinion. Louv (2010) emphasized that children who spend most of their time indoors face negative consequences such as retarded development, increased obesity, maladaptive behaviors and depression because they do not have enough experience to play freely and explore their environment. This view supports the mothers' opinions about the positive effect of outdoor activities on socialization. Fjortoft & Sageie (2000) concluded that outdoor activities increase fine motor development and the development of eye-hand-foot coordination, which is in line with the mothers' positive opinion that it will support motor skills. In addition, parents in İnce & Akcanca's (2021) study stated that outdoor learning environments in the preschool education process have multifaceted advantages for life skills such as observing concrete and real objects/events, gaining real life experiences, learning rules such as queuing, waiting in line, etc.; for cognitive skills such as realizing permanent learning and learning by doing; for social skills such as socialization opportunity, development of cooperation, development of self-confidence and for affective skills such as enjoyment. This result supports the findings of the present study. When the suggestions of the mothers in outdoor activities were examined, they stated that "going to the shopping mall" could be used more effectively in the indoor area and "school garden" could be used more effectively as an outdoor area. Tepebağ & Aktaş Arnas (2017) found that using school gardens as an educational environment in learning processes is of great importance to support children's development and creativity. This is in line with the suggestions made in the current study.

Within the scope of the fifth sub-problem of the study, "What are your expectations from the school or teachers in outdoor activities provided to your child at school?", mothers mostly expressed their opinions as "social skills expectations". Apart from this, some mothers demanded that problem

behaviors be reduced and that communication be established with senior management, while there are also mothers who do not have any expectations. There are differences between the expectations of parents with normally developing children and parents who have children diagnosed with ASD. Kalburan (2014) found in his study that although families wanted to increase the number of playgrounds, parks and green environments for different reasons, more serious precautions should be taken for the safety of these environments. In this study, the fact that mothers who have children diagnosed with ASD frequently request social skills may be due to the fact that they are isolated by the society. Li et al. (2019) found that parents generally felt that their children were excluded from outdoor public spaces. İnce & Akcanca (2021) conducted a study on the reasons why outdoor learning environments are not utilized frequently enough in preschool education. Among the most frequently cited reasons given by the parents in that study were economic reasons, which were stated as the cost of outdoor learning environments. However, in this study, the reason why mothers expected to communicate with senior management units is that these cost expenses can be covered by senior management units. While mothers of children with special needs express their concerns depending on their children's diagnostic status and therefore limit their children's participation in outdoor activities, mothers of children with normal development limit their children's participation in outdoor activities for simpler reasons such as lack of interest, safety and time. Alat et al. (2012) found that parents try to keep their children away from cold weather, mud, insects, animals, in short, from nature for reasons such as health and safety in their limited urban lives. He concluded that even in schools with garden facilities, children spend more time in the classroom environment due to teachers' and parents' concerns about safety and health issues and weather conditions. As a result of their study, Tepebağ & Aktaş Arnas (2017) found that the biggest obstacle to outdoor learning experiences was adults' concerns that weather conditions would negatively affect children's health. Kalburan (2014) also concluded that families have concerns about outdoor play due to dangers such as traffic density, kidnapping by strangers or being injured for different reasons.

It is seen that the opinions of mothers who have children diagnosed with ASD towards the outdoor space do not differ according to the age, gender and year of diagnosis of the children, but differ according to the diagnosis group of the children, the number of siblings, the education level and occupation of the mothers. These findings coincide with the findings of Karaca & Aral (2020) that there is no difference according to gender and that there is a difference according to educational status.

Limitations

This study is limited to 13 mothers who have children diagnosed with ASD in western Turkey. This constitutes the first limitation of the study. The second limitation of this study is that the mothers were only asked questions about outdoor education.

Suggestions

- Access to outdoor spaces and facilities may be suitable or adaptable for children with ASD.
- Since the study was limited in terms of the number of participants and a single diagnostic group, the scope can be broader and more in-depth in future studies. The study can also be conducted with fathers who have children diagnosed with ASD.
- The study can also be addressed in terms of teachers working with children who have special needs

Acknowledgments

There are no sources of funding or other acknowledgements to report.

Author contribution

All authors contributed significantly to the study including a review of the literature, analysis and interpretation of the data, and writing the manuscript.

Conflict of interest

The authors declare they have no conflicts of interest.

Ethical approval

All procedures performed in studies involving human participants are in accordance with the ethical standards of the institutional and/or national research committee and approved by the ethics committee of Sakarya University Educational Research and Publication Ethics Committee in Turkey with the decision numbered "15" taken at the meeting dated 14.06.2023 and numbered 20.

References

- Alat, Z., Akgümüş, & Cavalı, D. (2012). Outdoor activities: early childhood teachers' beliefs and practices. *Mersin University Journal of the Faculty of Education*, 8(3), 47–62.
- American Academy of Pediatrics. (2023, March 23). Autism spectrum disorder in children. [https://www.healthychildren.org/English/healthissues/conditions/Autism/Pages/Diagnostic_and_statistical_manual_of_mental_disorders:_DSM-5_\(5th_ed.\)._\(Vol._5\)._American_Psychiatric_Publishing](https://www.healthychildren.org/English/healthissues/conditions/Autism/Pages/Diagnostic_and_statistical_manual_of_mental_disorders:_DSM-5_(5th_ed.)._(Vol._5)._American_Psychiatric_Publishing)
- Aşkar, N. (2021). Outdoor Education: An evaluation in the context of preschool education program materials. *Journal of Education for Life*, 35(1), 132–153. <https://doi.org/10.33308/26674874.2021351236>
- Ata, S. (2016). *An Investigation of Preschool Teachers' Beliefs And Practices about Preschool Outdoor Play* (Unpublished Master Thesis). Hacettepe University.
- Jayasuriya, A., Williams, M., Edwards, T., & Tandon, P. (2016). Parents' perceptions of preschool activities: Exploring outdoor play. *Early Education and Development*, 27(7), 1004–1017. <https://doi.org/10.1080/10409289.2016.1156989>
- Blake, A., Sexton, J., Lynch, H., Moore, A., & Coughlan, M. (2018). An exploration of the outdoor play experiences of preschool children with autism spectrum disorder in an Irish preschool setting. *Today's Children are Tomorrow's Parents*, 47-48, 100–116.
- Büyüköztürk, Ş., Kılıç-Çakmak, E., Akgün, Karadeniz, & Demirel, F. (2017). *Scientific Research Methods (32nd ed.)*. PegemAkademi.
- Canpolat Çığ, N. (2022). *Autism Spectrum Disorder: Communication and Language Characteristics*. In H. Diken (Ed.), *Autism Spectrum Disorder in Early Childhood* (1st ed., pp. 108–127). PegemAkademi.
- Cevher Kalburan, N. (2014). Preschool children's opportunities and parents' opinions regarding outdoor play. *Journal of Social Policy Studies*, (32), 113–135. <https://doi.org/10.21560/spcd.21616>
- Civelek, P., & Özyılmaz Akamca, G. (2018). The effect of outdoor activities on scientific process skills of preschool children. *Kastamonu Education Journal*, 26(6), 2011–2019. <https://doi.org/10.24106/kefdergi.2297>
- Civelek, P., & Uyanık, G. (2020). Investigation of the 'Outdoor Classroom Day' activities in preschool education: The effect of Covid- 19 pandemic. *Kocaeli University Journal of Education*, 3(2), 116–134. <https://doi.org/10.33400/kuje.814337>
- Dyment, J. E. (2005). Green School grounds as sites for outdoor learning: Barriers and opportunities. *International Research in Geographical and Environmental Education*, 14(1), 28–45. <https://doi.org/10.1080/09500790508668328>
- Emond, A., Emmett, P., Steer, C., & Golding, J. (2010). Feeding symptoms, dietary patterns, and growth in young children with autism spectrum disorders. *Pediatrics*, 126(2). <https://doi.org/10.1542/peds.2009-2391>
- Fahy, S., Delicâte, N., & Lynch, H. (2020). Now, being, occupational: Outdoor play and children with autism. *Journal of Occupational Science*, 28(1), 114–132. <https://doi.org/10.1080/14427591.2020.1816207>
- Fjørtoft, I., & Sageie, J. (2000). The natural environment as a playground for children. *Landscape and Urban Planning*, 48(1–2), 83–97. [https://doi.org/10.1016/s0169-2046\(00\)00045-1](https://doi.org/10.1016/s0169-2046(00)00045-1)
- Geney, F., Özsoy, Z., & Bay, D. N. (2019). Outdoor properties of preschool education institutions: Sample of Eskisehir. *Eskisehir Osmangazi University Journal of Social Sciences*, 20, 735–767. <https://doi.org/10.17494/ogusbd.553864>

- Güzelyurt, T., & Özkan. (2018). Views of prospective preschool teachers about environmental education in preschool period: A Case Study. *Turkish Studies Educational Sciences*, 13(11), 651–668. <https://doi.org/10.7827/turkishstudies.13425>
- Hume, K., Steinbrenner, J. R., Odom, S. L., Morin, K. L., Nowell, S. W., Tomaszewski, B., Szendrey, S., McIntyre, N. S., Yücesoy-Özkan, S., & Savage, M. N. (2021). Evidence-based practices for children, youth, and young adults with autism: Third generation review. *Journal of Autism and Developmental Disorders*, 51(11), 4013–4032. <https://doi.org/10.1007/s10803-020-04844-2>
- PalMBERG, I. E., & Kuru, J. (2000). Outdoor activities as a basis for environmental responsibility. *The Journal of Environmental Education*, 31(4), 32–36. <https://doi.org/10.1080/00958960009598649>
- İnce, S., & Akcanca, N. (2021). Parents' views on out-of-school learning environments in preschool education. *Mehmet Akif Ersoy University Journal of Faculty of Education*, 58, 172–197. <https://doi.org/10.21764/maeuefd.886446>
- Jidovtseff, B., Kohnen, C., Belboom, C., Dispa, C., & Vidal, A. (2021). Outdoor education practices in Belgian preschools and relationships with both environmental and personal factors. *Journal of Physical Education and Sport*, 21(1), 530–536. <https://doi.org/10.7752/jpes.2021.s1058>
- Kaba, D., & Soykan Aysev, A. (2020). Dsm-5 evaluation of autism spectrum disorder in early childhood according to diagnostic criteria. *Turkish Journal of Psychiatry*, 31(2), 106-12. DOI: 10.5080/u23735
- Kalburan, N. C. (2014). A comparative study of public and private kindergartens in Denizli province. *Pamukkale University Journal of Institute of Social Sciences*, (18), 99-113. Retrieved from <https://dergipark.org.tr/en/pub/pausbed/issue/34738/384126>
- Kandemir, M. (2020). Outdoor time practices in early childhood education: parent and teacher views (Master's thesis) Middle East Technical University.
- Kandır, A. & Alpan, Y. (2008). The effect of parent behaviors on social-emotional development in preschool period. *Journal of Social Policy Studies*, 14(14), 33-38. Retrieved from <https://dergipark.org.tr/en/pub/spcd/issue/21109/227348>
- Karaca, N. H., Uzun, H., Metin, S., & Aral, N. (2020). Demographic factors associated with young children's motor creativity. *Cypriot Journal of Educational Sciences*, 15, 5, 1307-1319. <https://doi.org/10.18844/CJES.V15I5.5169>
- Kaya, S. & Ulusoy, M. (2018). Evaluation of design criteria for outdoor space in preschool education buildings- The Case of Konya. *Artium*, 6 (2), 33-39. Retrieved from <http://artium.hku.edu.tr/en/pub/issue/38499/443810>
- Küçün, Y. (2022). Covid-19 examining the views of preschool teachers on the use of outdoor space in preschool education institutions in the context of the pandemic (Unpublished Master's Thesis). Maltepe University.
- Li, D., Larsen, L., Yang, Y., Wang, L., Zhai, Y., & Sullivan, W. C. (2019). Exposure to nature for children with autism spectrum disorder: *Benefits, caveats, and barriers*. *Health & Place*, 55, 71-79. <https://doi.org/10.1016/j.healthplace.2018.11.005>
- Liz O'Brien (2009) Learning outdoors: the Forest School approach, *Education*. 3-13: *International Journal of Primary, Elementary and Early Years Education*, 37:1, 45-60, DOI:10.1080/03004270802291798
- Louv, R. (2021). *The last child in nature. Nature deprivation in our children and the healing power of nature*. (7th ed.). TUBITAK Popular Science Books.
- Marja Syrjämäki, Jyrki Reunamo, Henri Pesonen, Raija Pirttimaa & Elina Kontu (2023): The involvement of autistic children in early childhood education, *European Journal of Special Needs Education*, DOI: 10.1080/08856257.2023.2179310.
- Mart, M. (2021). Parental perception to outdoor activities. *International Journal of Progressive Education*, 17(4), 358-372. <https://eric.ed.gov/?id=EJ1308438>
- McClintic, S., & Petty, K. (2015). Exploring early childhood teachers' beliefs and practices about preschool outdoor play: A qualitative study. *Journal of Early Childhood Teacher Education*, 36(1), 24-43. <https://doi.org/10.1080/10901027.2014.997844>

- Michek, S., Nováková, Z., & Menclová, L. (2015). Advantages and disadvantages of forest kindergarten in the Czech Republic. *Procedia - Social and Behavioral Sciences*, 171, 738-744. DOI:10.1016/j.sbspro.2015.01.186.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis* (2nd ed.). SAGE.
- Mitchell, S., Cardy, J. O., & Zwaigenbaum, L. (2011). Differentiating autism spectrum disorder from other developmental delays in the first two years of life. *Developmental Disabilities Research Reviews*, 17(2), 130-140. <https://doi.org/10.1002/ddr.1107>
- Must, A., Phillips, S., Curtin, C., & Bandini, L. G. (2015). Barriers to physical activity in children with autism spectrum disorders: Relationship to physical activity and screen time. *Journal of Physical Activity and Health*, 12(4), 529-534. <http://dx.doi.org/10.1123/jpah.2013-0271>
- Orum Çattık, M. (2022). *Autism Spectrum Disorder: Cognitive Features*. Diken. İ.H. (Ed.) *Early Childhood Autism Spectrum Disorder Basic Knowledge* (1st Edition, pp. 132-140). Pegem Akademi
- Remmen, K. B., & Iversen, E. (2022). A scoping review of research on school-based outdoor education in the Nordic countries. *Journal of Adventure Education and Outdoor Learning*, 1-19. <https://doi.org/10.1080/14729679.2022.2027796>
- Rivkin, M. (1997). The schoolyard habitat movement: What it is and why children need it. *Early Childhood Education Journal*, 25(1), 61-66. <https://eric.ed.gov/?id=EJ554391>
- Sağlam Tekir, H. (2015). Education of deaf-mute and amblers in the Ottoman Empire and their role in social life (1889-1922) (Doctoral Dissertation). Kafkas University.
- Sinan, C. & Yerli, Ö. (2019). Determination of outdoor optimum use opportunities in kindergarten gardens: examples from the Anatolian side of Istanbul. *Düzce University Faculty of Forestry Journal of Forestry*, 15 (2), 17-38. Retrieved from. <https://dergipark.org.tr/en/pub/duzceod/issue/51465/668323>
- Sizhan, A. (2022). Investigation of outdoor play opportunities of 3-6 year old children according to parents' opinions (Non-Thesis Master's Project). Pamukkale University.
- Sjöblom, P., Eklund, G., & Fagerlund, P. (2021). Student teachers' views on outdoor education as a teaching method—two cases from Finland and Norway. *Journal of Adventure Education and Outdoor Learning*, 1-15. <https://doi.org/10.1080/14729679.2021.2011338>
- Tepebağ, D. & Aktaş Arnas, Y. (2017). Investigation of preschool teachers' opinions on the use of school garden for educational purposes. *International Journal of Early Childhood Education Studies*, 2 (2), 50-67. Retrieved from. <http://ijeces.hku.edu.tr/tr/pub/issue/31378/337735>
- Toper, Ö. (2022). *Autism Spectrum Disorder: Behavioral Features*. Diken. İ.H. (Ed.) *Early Childhood Autism Spectrum Disorder Basic Information* (1st Edition, pp. 54-72). Pegem Akademi
- Töret, G. & Özmen, R. (2016). Reciprocal imitation training in children with autism spectrum disorder. *Ankara University Faculty of Educational Sciences Journal of Special Education*, 17 (03), 377-394. DOI: 10.21565/ozelegitimdergisi.26856
- Turgut, H., & Yılmaz, S. (2010). Creation of ecologically based children's playgrounds. III. National Black Sea Forestry Congress, <https://hdl.handle.net/11494/770>
- Xie, Y., Jin, Z., Huang, H., Li, S., Dong, G., Liu, Y., ... & Guo, Y. (2022). Outdoor light at night and autism spectrum disorder in Shanghai, China: A matched case-control study. *Science of The Total Environment*, 811, 152340. <https://doi.org/10.1016/j.scitotenv.2021.152340>
- Yalçın, F. & Tantekin Erden, F. (2022). A review on outdoor spaces of early childhood education institutions: design and evaluation. *Ankara University Journal of Faculty of Educational Sciences (JFES)*, 55 (1), 263-312. DOI: 10.30964/auedfd.748799
- Yıldırım, A. & Şimşek, H. (2011). *Qualitative research methods in social sciences* (7th Edition). Ankara: Seçkin Publishing.
- Yıldırım, G., & Özyılmaz Akamca, G. (2017). The effect of outdoor learning activities on the development of preschool children. *South African Journal of Education*, 37(2). DOI: 10.15700/saje.v37n2a1378
- Yıldırım, M. (2017). Independent kindergarten teachers' opinions on outdoor playgrounds and applications. (Master's Thesis). Anadolu University Institute of Educational Sciences,

- Yılmaz, T. (2019). *An Examination of Changes Between the Last Two Editions of the Diagnostic and Statistical Manual of Mental Disorders (DSM)*. Health from the Perspective of Psychology, Sociology and Geography. Yılmaz T. (Ed) Berikan Publishing House
- Yılmaz, S. (2016). Outdoor environment and outdoor activities in early childhood education. *Mersin University Journal of Faculty of Education*, 12(1). <https://doi.org/10.17860/efd.80851>
- Zachor, D. A., Vardi, S., Baron-Eitan, S., Brodai-Meir, I., Ginossar, N., & Ben-Itzhak, E. (2017). The effectiveness of an outdoor adventure programme for young children with autism spectrum disorder: A controlled study. *Developmental Medicine & Child Neurology*, 59(5), 550–556. <https://doi.org/10.1111/dmcn.13337>
- Ziegler, S. M., & Morrier, M. J. (2022). Increasing social interactions of preschool children with autism through cooperative outdoor play. *The Journal of Special Education*, 00224669211032556. <https://doi.org/10.1177/00224669211032556>