

Investigation of the Views' of the Mothers of Children with Autism Spectrum Disorder on Suspending Special Education during the Covid-19 Pandemic Process

Duygu ARICI DOGAN* Ertan GORGU**

Atf için:

Arici-Dogan, D., & Gorgu, E. (2022). Investigation of the views' of the mothers of children with autism spectrum disorder on suspending special education during the Covid-19 Pandemic Process. *Journal of Qualitative Research in Education*, 30, 107-xx. doi: 10.14689/enad.30.5

Abstract: This study aims to examine the views of mothers of children with autism spectrum disorder (ASD) on curfew and suspension of special education during the Covid-19 pandemic. This research was carried out with the mothers of children with ASD who attend a special education center in Gaziosmanpasa, Istanbul. The research is a qualitative study conducted in the phenomenology pattern. "Personal Information Form" and "Semi-Structured Interview Form" prepared by the researchers were used to collect the data, and face-to-face interviews were conducted with the mothers. The analysis of the data was made with the content analysis method. According to the results obtained from the research findings, it was determined that suspension of special education due to Covid-19 has positive and negative effects on children with ASD. When the positive effects are examined, it has been revealed that the pandemic has mostly experienced changes in family relations on children with ASD. The area with the highest negative effects was reported as behavioral problems.

Keywords: Covid-19, special education, children with ASD, mothers

Article Info

Received:
04 Mar. 2021

Revised:
16 Mar. 2022

Accepted:
23 Mar. 2022

Article Type

Research

© 2022 ANI Publishing. All rights reserved.

*  Corresponding Author: Biruni University, Turkey, ddogan@biruni.edu.tr

**  Istanbul Medeniyet University, Turkey, ertangorgu@gmail.com

Introduction

From past to present, the world has faced many health problems. One of them is epidemic diseases. A large part of these epidemics was not limited to the region where they occurred but also spread to other regions and caused many deaths (Turan and Celikyay, 2020). The Covid-19 pandemic has also been one of the epidemics that affected the world. The novel Coronavirus Disease (COVID-19), first seen in Wuhan, Hubei Province, China, in late December 2019; it emerged as a virus identified on 13 January, 2020, as a result of research conducted in a group of patients with respiratory problems (fever, cough, shortness of breath) (Sandalcı et al., 2020). The disease affected the whole world in a short time and was declared a pandemic by the World Health Organization (WHO) in March 2020 (WHO, 2020). With the evaluation of the scientific committee and the recommendations of the WHO, the whole world tried to reduce the spread of the disease by taking various measures according to their strategies. Many activities have been temporarily suspended or restricted in this context, primarily using the social isolation method. Due to the rapidly increasing number of cases after the first case in our country, many precautionary measures have been taken to minimize the risk of transmission. One of the precautions was the decisions taken regarding education and training.

It has been announced that primary and high schools will be suspended for 1 week as of 16 March, 2020 and will switch to distance education as of 23 March, 2020. Still, with the increase of the effect of the pandemic, it was decided to extend it from 30 April, 2020 to 31 May, 2020, and the exams were postponed. In addition, as of 13 March 2020, private kindergartens, day care centers, private children's clubs and special education and rehabilitation centers were closed. However, considering that the danger of the disease is increasing day by day, these precautions have been extended to cover the 2020 spring semester education period. The progress of the process in this way affected all of the children and their families, and the discontinuation of important support such as education for special children who developed differently from normal showed that they were the group most affected by the pandemic (Bozkurt et al., 2020; Guterres, 2020).

Special education is an educational system that is developed for individuals who differ from normal development due to differences in their physical, cognitive, interactional, social, and emotional development and therefore cannot benefit from normal education, partially benefit or need support education despite benefiting from it. It is training by specialized professional staff with a team approach, with particular methods and materials, if necessary, in certain places, with proper programs developed differently for each individual with special needs (Baykoc, 2015). The main purpose of special education is to ensure the acquisition of the necessary behaviors so that the child can lead an independent life, taking into account his best interests, to improve his relations with the social environment in a positive way, ensuring his participation in social life, and, above all, to minimize the negative behavioral changes that may occur for various reasons.

ASD is defined as a neuro-developmental disorder characterized by limited/repetitive behavioral sequences, insistence on routines and an excessive commitment to routines, ongoing social interaction and communication problems, and abnormal reactions to emotional stimuli (American Psychological Association, APA, 2013). It is a spectrum disorder that occurs in early childhood and includes delays in the development of social interaction, communication, language development and behavioral areas (Centers for Disease Control and Prevention, CDC, 2007). It is reported that the diagnosis is mainly made around the age of three. It is known that behaviors such as turning around, repetitive movements, object obsessions, excessive commitment to routines, tantrums, and hyperactivity are common in children diagnosed with ASD at the early age range (Motavalli-Mukaddes, 2017). When considered as a developmental disability, ASD is the most common type of developmental disability after intellectual disability (Ministry of Family and Social Policies, 2016). In the 2020 report of the American CDC, it has been reported that one out of every 54 children has ASD (Maenner et al., 2020). The quality of life of the families of children with ASD is also negatively affected by this situation. It is stated that the negative situations caused by comorbid conditions accompanying ASD and the problems specific to autism will reduce the quality of life of both people with ASD and their parents (Yassibas and Colak, 2019).

The Covid-19 pandemic has caused children with ASD to move away from the educational environment and increase their time at home due to curfews. For this reason, considering the time that children with ASD stay away from education and spend at home, many changes seem possible, such as disruption of their routines, limitation of movement, lack of physical and academic support, and lack of peer interaction. Disruption of domestic and out-of-home routines during the pandemic may affect the psychological, social-emotional, academic, physical and mental development of children. However, it may pave the way for the emergence of different psychiatric problems or may intensify some of the problems (obsession, obsession, trauma-related disorders, depressed mood, anxiety-related conditions) that exist in most children with ASD (Ercan et al., 2020). It is thought that children with ASD, who are especially sensitive about routines, may be at higher risk than other groups. Studies show that mothers of children with special needs take almost all of their child's daily care and responsibilities (Marcenko & Meyers, 1991). In a pandemic, the main person who took care of the child was their mother. For this reason, it is thought that the person who will observe the changes in the child most closely will be the mother.

A large number of new scientific studies, especially in the field of health, have been carried out regarding Covid-19, which has taken the world under its influence from the moment it emerged. The reflections of a disease that affects daily life in education are one of the research areas. During the Covid-19 pandemic, many international and national studies have been conducted for children with special needs and their families. In another study by Di-Renzo et al. (2020), it was concluded that there was an increase in the limited and repetitive behaviors of children with ASD during the pandemic. In a study conducted with families with children with ASD, families expressed their desperation due to their children's problematic behaviors in nutrition and eating

(Stankovic et al., 2020). Pacheco et al. (2020) reported that the pandemic negatively affected children with special needs academic achievement. In the study of Mutluer, Doenyas, and Aslan-Genc (2020), it was revealed that children with ASD increased the severity of behavioral problems in the Covid-19 pandemic, were negatively affected, and significantly predicted the anxiety level of their families. Sahin and Singin (2020) in their study that explored the effect of the pandemic on motor skills in children with ASD, found that children's basic motor skills declined significantly.

In a study comparing the physical activity levels of children with ASD before and during Covid-19, it was concluded that children's physical activity levels decreased significantly during the pandemic (Ince Parpucu, Suzen Parpucu, 2021). Considering the studies and the importance of the Covid-19 pandemic as an unknown process, the need for new studies is increasing. Considering that the cognitive, social, emotional, language, and motor development of children with special needs, as opposed to children with normal development, is supported by special education, it is believed that the loss of learning due to school closures during the Covid 19 pandemic will involve many different situations for the children. One of the prominent features of the study is that it was carried out in line with the opinions of mothers who provide primary care for children. While the studies generally proceed on a single variable (eg, motor skills, problem behavior, etc.), it can be thought that this study will present a different perspective to the literature, as this study deals with the experiences of mothers and the situation analyzes regarding the education system. Again, it will open a different window for the studies to be carried out. It provides the opportunity to deal with it from a wide framework in every aspect and reveal the situations that children with ASD live in in different areas. In addition, it is thought that the study will guide educators to organize different teaching methods or training programs in the "new normal", taking into account the opinions of mothers in line with the needs of children who have started education again in the new period.

As a result, this study aimed to examine the views of mothers of children with ASD, who are thought to be in the high-risk group, regarding the suspension of special education during the Covid-19 pandemic. For this purpose, it is thought that the study will contribute to the literature and form the basis for other studies to be done.

Method

Model of the Research

This research was conducted to examine the views of mothers who have children with ASD regarding their children's experiences during the Covid-19 pandemic. Phenomenological design, one of the qualitative research methods, was used in the research. In studies conducted with a phenomenological research design, the common meaning of the participants' lived experiences about a phenomenon or concept is defined in depth (Creswell, 2013). It is a pattern that aims to highlight the perceptions and experiences of individuals according to their perspectives (Ersoy, 2016). Since this

study aims to examine the effects of curfews and staying away from education, it has been decided that the appropriate method in which the possible consequences of this process can be investigated is the qualitative method.

Sampling

The participants were reached with the snowball/chain sampling method, one of the purposeful sampling methods. The snowball/chain sampling method is to reach other participants based on the suggestions of the people reached in the research (Yildirim & Simsek, 2016). The snowball/chain sampling method was used in the research because the Covid-19 pandemic was ongoing and it was difficult to reach the participants under pandemic conditions at the time of the research.

Table 1.

Demographic Information of Mothers, Children with ASD and Fathers

Nickname	Features of Mothers			Features of Fathers				Features of Children with ASD		
	Age	Education	Occupation	Age	Education	Occupation	Working Status	Sex	Age	Number of Sibling
Aylin	45	Primary School	Housewife	50	Primary School	Self-employed	Unemployed	M	12	2
Asli	38	College	Housewife	40	College	Accountant	Employed	F	4	1
Seda	40	Primary School	Housewife	45	High School	Self-employed	Unemployed	M	14	1
Melek	34	Primary School	Housewife	50	Primary School	Self-employed	Unemployed	M	7	1
Arzu	49	Primary School	Housewife	48	Primary School	Self-employed	Unemployed	M	13	1
Nil	47	Primary School	Housewife	55	Primary School	Self-employed	Unemployed	F	4	1
Derin	35	Primary School	Housewife	42	Primary School	lathe operator	Employed	M	10	1
Selin	28	Primary School	Housewife	38	Primary School	Self-employed	Employed	M	6	2
Nur	50	Primary School	Housewife	53	Primary School	Self-employed	Unemployed	M	7	2
Busra	40	Primary School	Housewife	43	Primary School	Self-employed	Employed	M	16	1
Esra	29	Primary School	Housewife	33	Primary School	Self-employed	Employed	M	5	1
Beyza	40	College	Housewife	40	College	Accountant	Employed	M	6	1
Elif	23	Primary School	Housewife	33	Primary School	Self-employed	Unemployed	M	7	1
Ece	25	High School	Housewife	27	College	Programmer	Employed	M	5	0
Esin	30	Primary School	Housewife	35	High School	Self-employed	Unemployed	M	5	0

Because mothers are most involved with the daily care and education of children during and before the pandemic, it was thought that mothers would be the best people to

observe the possible effects of this time. For this reason, questions about possible changes in children were directed to mothers.

When collecting data in qualitative studies, it is not known in advance what the sample size will be. Especially when it comes to events, facts and situations that have not been studied or studied at all, the researcher may decide that they have reached a sufficient number of sources if the concepts and processes that emerged in the research start to repeat each other (Yildirim & Simsek, 2016). The researchers noticed that the concepts that occurred in this study were repeating each other and, thinking that the sample had reached sufficient saturation, they ended the data collection process when the number of participants was 15. Verbal consent was obtained from the participants before starting the study. Ethics committee approval was obtained from T.C Istanbul Medeniyet University Educational Sciences Ethics Committee with the decision numbered 2020/01-02 on 21.09.2020. Demographic characteristics of the participants, namely mothers, children with ASD, and fathers are given in Table 1.

Data Collection

All data were collected by face-to-face interviews with the participants between October 2020 and November 2020. Face-to-face interviews were conducted in the interview room in a rehabilitation center. All interviews were recorded with the voice memos application of the iPhone. Before the interview, both written and verbal consent was obtained from the participants. In addition, they were informed that the audio recording was taken for transcription and that it would be re-shared with them for final approval after it was transcribed. Each interview lasted an average of 15-20 minutes. Before the interview questions were asked, demographic information was obtained with the "Personal Information Form", and the "Voluntary Consent Form" was mutually signed for the research. Code names were given to the mothers to not pose any ethical problems.

Instruments

In the study, the data collection form prepared by the researchers was used. In the first part of this form, there were questions to learn the socio-demographic characteristics of the participants. A question was asked during the interview, but when deemed necessary by the researcher, "drilling" questions were also asked. In the second part, only one question was asked to the participants; "Private education centers were closed during the Covid-19 pandemic, education was suspended, and curfews were imposed on various days. What kind of effects did you observe on your child with ASD?"

Data Analysis

One of the methods used in analysing qualitative data is to create codes and reveal themes through the codes. In this study, firstly, the audio-collected data has been transcribed. The transcriptions have been sent back to the participants, and they were

confirmed whether what they wanted to say was understood correctly. Then, the researchers have read the data prepared for analysis separately and codes were created in general. Two researchers read the data set separately, and the whole data set has been coded. If a code different from the ones created before emerged, rearrangements have been made to the code set. These determined codes form the basis for the themes and explanations in the findings part of the research (Creswell, 2013). After coding the data set separately by the two researchers, the codes and code definitions have been compared, and the codes were agreed upon. Thus, it has been aimed to reach a richer coding table by coding the data set separately by two researchers. The codes agreed upon by both researchers were established and the data set was coded jointly by the two researchers in full agreement. Themes and sub-themes were obtained by combining the created interrelated codes. Then, the data of the participants 1,4,6,7,10,13 selected from the dataset by a simple random method and the prepared code set were given to an expert who completed their doctoral thesis in the field of special education with the qualitative data analysis method, and the datasets were asked to be coded. E.g; The "new behavior emerged" code deduced by the researcher was coded as "a new and undesirable behavior occurred" by the other coder. In this case, the data were reviewed again and as a result of the discussions, the code name was changed and ordered as "a new and undesirable behavior has occurred." Inter-rater reliability study was conducted by comparing the coding of the expert with the data set coded by the researchers. A consensus was reached by discussing the different codes that emerged. Calculation was made using the formula of consensus / (agreement + disagreement) x 100. According to the coding control, it is expected that the consensus among coders will be at least 80% (Cooper, Heron, & Heward, 1987). The inter-coder reliability of the study was found to be 96.6%.

For internal validity, member checking method has been used. Member checking confirms whether or not what they want to say is actually expressed by giving the transcriptions to the participants. This method is used for internal validity (Holloway & Wheeler, 1996). After the interviews have been conducted, the audio recordings were translated into text. Each participant's audio recording was transcribed and returned to them so that the accuracy of their statements could be confirmed. None of the participants requested changes.

Findings

This section analyzes the answers given by the mothers of children with ASD to the question asked in the semi-structured interview form to examine their views on suspension of special education during the Covid-19 pandemic. The findings were handled through the question in the interview form and were grouped under two main topics, considering the answers given by the participants, and the themes associated with each topic and the sub-themes associated with the themes were listed. To reflect the participants' perspectives, the participants' statements were given in quotation marks and italicized. When the participants' answers were examined, two categories were formed

as positive and negative effects, and themes and sub-themes were discussed under these categories.

The views of mothers with children with ASD on the positive impact of special education suspension due to the Covid 19 pandemic on their children were defined into four themes and eight subthemes. These themes and sub-themes are presented in Table 2 to consider their findings and interpretations as a whole.

Table 2.

Mothers' Views on Positive Effects

Category 1: Positive Effects	
Theme	Sub-Theme
Language Development	<ol style="list-style-type: none"> 1. the number of words increased 2. taking commands increased 3. making new sounds
Family Relations	<ol style="list-style-type: none"> 1. starting to play with siblings having a good time with father
Communication	<ol style="list-style-type: none"> 1. talking increased 2. starting and maintaining communication
Social-Emotional Development	<ol style="list-style-type: none"> 1. peer interaction increased

Based on the mothers' comments participating in the study on language development, which was evaluated in the positive category, the sub-themes of "the number of words increased, taking commands increased, and making new sounds" were obtained. While **Ece** stated that *"I noticed that the words they use when playing with the cat at home have increased"*, **Seda** stated that, *"I can say that their understanding of what is being said has increased, they started immediately when I said close the door, get water or something"*. In addition, **Nil** said, *"They started making noise, the crowd probably helped them, they did not understand what was being said, they started closing the door when I told them to close the door while I was home. When I say bring it, they bring it"*. It is reasonable to assume that being together and interacting at home during Covid-19 promotes children's language development.

Mothers mentioned the theme of family relations as one of the positive effects of suspension of special education due to the Covid-19 pandemic on their children, and it was observed that the sub-themes of starting to play with siblings and having a good time with father emerged in children with ASD. Participants stated their opinions as follows: **Aslı**: *"Their older sister was very supportive. They played games together, I have a very understanding child"*. **Seda**: *"They played with their brother all the time. We did an event together. I could not take care of them too much because the housework never stops, it gets messier when you are always at home"*, **Esra**: *"Our father was very supportive. When he came home from work, he would take them for a walk every night, taking away their energy"*. **Esin**: *"My partner was also there; we had the opportunity to*

spend time as a family during this process. We were able to spare more time. Since they were the only child, they did not have a sibling to spend time with or play with, so we tried to support them as much as we could. They spent more time with their father, which made them happy". Some mothers stated that being together with their children, especially with their siblings, has positive results as they can spend more time playing games in this process. The fact that fathers are more at home during the pandemic, unlike routines, has increased the time they spend with their children, and it has been concluded that this time spent for some families has a positive effect on their relations with their children with ASD.

Participants stated that they experienced one of the positive effects on their children with ASD in the field of communication, and they reported the themes of "starting and maintaining communication" and "talking increased". Participants stated their opinions as follows: **Aylin:** *"They did not talk that much before, but they started to communicate with us a lot in the process",* **Ece:** *"The cat attracted their attention, they went to it while it was sleeping, and they started to communicate with the cat. They were speaking. I can say that this situation is good. Since we were always together, they started talking more and there was an improvement in the language".* **Esin:** *"Normally, they would like to go out a lot, but I think that they enjoyed being at home with us during this period. We did a lot of activities. We have progressed in communicating".* The fact that family members were together much more than in their normal lives and had the opportunity to communicate more with their children during the Covid-19 pandemic contributed to the acceleration of communication skills, which is one of the areas where children with ASD need support the most.

Mothers of children with ASD stated that "peer interaction increased" in the field of social-emotional development, which is one of the positive effects of interrupting special education due to the Covid-19 pandemic on their children. Participants stated their opinions as follows: **Melek's** comments: *"We have a garden. I called the other children in the apartment to socialize them. I did not want them to stay away from the children, we are already socially disadvantaged. I tried to support them as much as I could".* **Beyza:** *"When we went to the summer house, they had a boyfriend and I made sure they spent a lot of time with their boyfriend because it's important for us to encourage and support their social development".* According to the interviews with the participants, it can be said that families who live in houses with suitable physical conditions, whose neighborly ties have not disappeared and who are aware of the importance of social interaction for their children, provide for peer interaction.

The views of mothers with children with ASD on the negative effects of interrupting special education due to the Covid-19 pandemic on their children were grouped under nine themes and twenty-two sub-themes. These themes and sub-themes are presented in Table 3 to consider their findings and interpretations as a whole.

Table 3.

Mothers' Views on Negative Effects

Category 2: Negative Effects	
Tema	Alt Tema
Behavioral Problems	<ol style="list-style-type: none"> 1. aggressiveness increased 2. irritable, and a new behavior emerged 3. screaming increased 4. hitting increased 5. crying increased 6. aggressive behavior increased 7. masturbation increased 8. biting increased
Cognitive Development	<ol style="list-style-type: none"> 1. decrease in skill teaching 2. forgetting the concepts learned 3. forgetting the letters 4. regression in reading skills
Family Relations	<ol style="list-style-type: none"> 1. fighting with the father 2. bad relationship with the sibling 3. dependence on the mother
Use of Technological Tools	<ol style="list-style-type: none"> 1. screen time increased 2. playing with phone increased
Communication	<ol style="list-style-type: none"> 1. speech decreased
Language Development	<ol style="list-style-type: none"> 1. the number of words has decreased
Social-Emotional Development	<ol style="list-style-type: none"> 1. peer interaction has decreased
Motor Development	<ol style="list-style-type: none"> 1. decreases mobility
Nutritional status	<ol style="list-style-type: none"> 1. eating has increased

The mothers who participated in the study stated that their children's behaviors increased or a new behavior emerged towards the theme of behavioral problems, which was considered in the category of negative effects. They stated that they observed intense irritability, increased screaming and a new behavior in their children. According to the comments of the mothers; The sub-themes of "biting, hitting, screaming, crying, aggressive behavior and masturbation increased and irritable and a new behavior emerged" were obtained.

Participants stated their opinions as follows: **Aylin:** "We had limited mobility. This time the state of nervousness rose". **Selin:** "My child began to get very angry. It threw itself on the floor and hit its head. There was echolalia and repetitive movements". **Arzu:** "Being at home because they could not go out led to extreme nervousness. They started attacking everyone. They run around the house to and fro, shouts and starts hitting when what they wants is not done". **Derin:** "They broke their fingers. Aggressive behavior ensued. Biting, hitting, shouting, crying.... It was very difficult being at home". **Aslı:** "They were stuck with the screen. They were crying all the time when we did not open it. They started throwing themselves to the ground". **Elif:** "They had intense masturbation. Normally, this behavior was present, but its intensity increased. When they could not find anything to do, they started playing with themselves all the time". Considering these views, the increase

in time spent at home, the inability to discharge energy, and the deterioration of routines of children with ASD are considered the expected consequences of behavioral problems.

In terms of cognitive development, which is assessed in the negative impact category, mothers expressed that learned skills are interrupted and the teaching of skills diminishes, that children forget the concepts they have learned, memorise letters, and experience a regression in reading ability when their children drop out of class. Participants stated their opinions as follows: **Nur:** *"We took a break after their leg was broken, we started education again, but just as we were about to adapt, the pandemic started and brought us back to the beginning. There is almost no eye contact, waiting behavior is being studied but we cannot support them while we are at home. There is no authority now"*. **Seda:** *"Learning loss due to school closures in an academic sense has brought a lot of regression. I can not say that it has made progress because I could not support the subjects studied at home"*. And **Aylin:** *"We constantly warned them not to study during the day and we tried to create an appropriate environment, but they were quite indifferent to the lessons while they continued their education"*. I can say that learning loss due to school closures worked for them. This process can lead to academic regression. They were already a reluctant child. Since we could not establish the authority provided at school at home, their unwillingness and knowledge of the lessons decreased considerably. They forgot to read, they do not remember many letters. The importance of special education for children with ASD should not be overlooked. The periods when they needed extra support in the cognitive field, being away from education, caused the children to regress.

The mothers mentioned that the interruption of special education during the pandemic caused a bad relationship with their siblings in family relations for their children with ASD, the effect of their fathers being at home more, and the children becoming more dependent on them. Depending on these, the sub-themes of "fighting with the father" and "dependence on the mother" emerged. It was noteworthy that most of the participants stated that their children's relations with their siblings deteriorated. Participants stated their opinions as follows: **Seda:** *"Their father was also at home, but our father is indifferent. I cannot say it helped"*. **Nil:** *"Their father is an angry person; the two of them were stubborn all the time. He does not do what they want, and because he cannot accept that they are in this situation, he constantly blames me and does not care about the child. They fight with their brothers. They do not want to share their toys. Their relationship is very bad in this process"*. **Arzu:** *"They had a bad relationship with their father, and it increased in this process. They are always after me, does not leave me, does what I say, and I give them a few tasks to help with the housework, at least they stays calm in the process"*. **Derin:** *"They started hitting their sibling. Their sibling does not go near them anymore, they are afraid they will hit them, so they went away"*. Many psychological and sociological effects of having a sibling with special needs are expressed in studies. It is thought that the pandemic has brought another abnormality to the already ongoing abnormal life of the family. Children were also affected by this process in different ways, and this was reflected in their family relationships.

According to the findings obtained from the views of mothers with children with ASD about the use of technological tools, which is one of the negative effects of the disruption

of special education due to the Covid 19 pandemic on children with autism, the subthemes "screen time increased" and "playing with the phone increased". Participants stated their opinions as follows: **Nil**: *"Everyone was at home during this period, but this situation did not help us, their father is uninterested and gives him the phone to play or turns on the TV, so that he will not take care of our child. So, their screen time has also increased. We live in a crowded house and my mother-in-law is with us. They started watching TV all the time because the TV was always on"*. **Selin**: *"They always wanted to play with the phone. I put it on the cupboard, and they came out with the chair and got it. They had a nervous breakdown when we did not give them the phone, and we could not stop them from acting like that"*. Family members being indifferent to the children in this process or the children's inability to be in an environment different from their home environment and the limitation of their interests pushed the children to different directions.

Based on the mothers' views participating in the study on the theme of communication area, the sub-theme of "speech decreased" emerged. Participants stated their opinions as follows: **Elif**, one of the mothers: *"They had words, they does not speak at all anymore. Communication has decreased"*. While **Selin** expressed: *"They were going to speech therapy because they did not communicate, they can normally speak, but they does not prefer. They used to talk in the previous process, but now they do not prefer to talk too much. They are a non-communicative child"*. expressed as. Most children with ASD experience many problems in communication and receive supportive training in special education centers. Although learning loss due to school closures during the covid-19 pandemic has positive results in the field of communication for some families, it has been seen that it has negative consequences on their children. Family structure and the degree of autism are thought to be important parameters in experiencing this difference.

Mothers express another negative effect on children as "the number of words has decreased" in the field of language development. The mothers who participated in the study stated that they thought that the number of words their children used decreased because their children could not receive language development support after the education was suspended. Participants stated their opinions as follows: **Aslı**: *"Words began to increase in the field of language. I can say that the number of words they used decreased because we could not continue education"* and **Elif**: *"The language has regressed a lot. They had words, now they does not speak at all"*. Most children with ASD receive education or speech and language therapy to reduce or eliminate the problems they experience in language development. Considering the inability to provide this support with the pandemic and the length of the intervening time, this area may be negatively affected by the family's inability to take a supportive approach in this process.

The sub-theme obtained from the participant mothers' comments on the social-emotional development area is that the children's "peer interaction has decreased". Participants stated their opinions as follows: **Aylin**: *"They were very bored because they could not meet with their friends during the time we were at home, and they expressed this many times. Being at home as a social child affected him a lot in this way. They became antisocial. Peer interaction could not be achieved. At least they saw their friends when we came to school"*. **Ece**: *"At the beginning, I tried to support education by*

organizing activities, but after a while, we could not provide peer interaction". Many of the mothers participating in the study stated that the interruption of special education and curfews during the pandemic caused a decrease in the interaction of their children with their peers.

The mothers' opinions on the motor development theme, which is one of the negative effects, are that staying at home "decreases mobility" because their children cannot go to education or go out. Participants stated their opinions as follows: **Aylin:** *"My child has hyperactivity and not being able to go out affected him a lot. We had limited mobility".* It is very important to create environments and times where children with this diagnosis can necessarily transfer their energy. **Derin:** *"It was very difficult to be at home. They cannot go out, they cannot drain energy, they want constant movement, but it's not possible at home".* **Nur:** *"Inactivity made my child gain weight. They were already overweight, their weight increased even more. They had no physical activity, which prevented their energy discharge".* **Ece:** *"They wanted to go out, when they cannot go out, so they gets grumpy. I think it was the inactivity. They started bouncing in place".* Unfortunately, with the mandatory restrictions that come with the pandemic, it is very difficult for normal children to limit movement to the home, even for normal children, but it is much more difficult for children with ASD, and it is not possible for them to be affected by this process.

According to the findings obtained from the mothers' views on the nutritional status of children with ASD, the sub-theme of "eating has increased" emerged in their children. Participants stated their opinions as follows: **Derin:** *"They started to eat more food, they liked to eat, but they ate much more out of boredom".* **Elif:** *"Eating has increased a lot. As they stopped, they started to eat and expressed their experiences".* Nutrition of children with autism is the source of much research in the literature. At the same time, it is thought that the boredom of children who do not have the chance to use their time in a quality way at home may also support their tendency to eat. It was an expected result that problems related to nutrition increased during the pandemic.

Discussion and Recommendations

In this study, mothers with children with ASD were asked their thoughts and opinions about the suspension of special education due to the Covid 19 pandemic, and their responses were examined. Study was conducted face to face with 15 mothers. Effects of the special education suspension on children with ASD due to Covid-19 Pandemic were categorized into two main categories: Positive and negative outcomes. There were four positive and nine negative themes within these two categories. At the end of the interviews, it appeared that the suspension of special education during the Covid 19 pandemic had several impacts on children with ASD, according to the mothers. These impacts centered on the following themes: Behavior problems, family dynamics, communication, development and technology usage. It was seen that family dynamics were the most positively affected theme and the least positively affected theme was the

socio-emotional development. Negative effects were seen the most on behavior problems and the least on eating. In this section, the themes that emerged from the results were discussed by comparing them with the studies in the literature.

The positive effects of suspension of special education due to Covid-19 pandemic on children with ASD according to their mothers' opinions were examined and it was seen that family dynamics were positively affected. It was reported that children with ASD had a good time with their fathers and started to play with their siblings. Dayson and Fewell (1989) found that existence of a child with special needs in a family had an effect on family system and this existence allowed members to modify their roles in the system. In the last forty years, children diagnosed with ASD have increased, for his reason children who have sibling with ASD was also increased (Fountain, King and Bearman, 2011; Hansen, Schedel and Parner, 2015). It was found that children with a sibling with special needs showed more positive and less negative behaviors (Er, 2006). Powell (1993) stated that having a sibling with special needs is enjoyable and satisfying, although it is worrying. Children with ASD had the opportunity to spend more time with their siblings during the pandemic and they spent this period by sharing with each other. During the Covid-19 Pandemic study held by Rose et al. (2020), the pandemic gave family and children the opportunity to spend more time with each other. In the study of Evans et al. (2020) it was stated that family relations were better than ever during the pandemic. Another study held with mothers of children with special needs showed that 45% of children's relationships with their parents and 20% of 'children's relationships with their siblings were positively affected (Yersel, Akba, and Durualp, 2021). The interaction between father and children has an important place for the 'child's development and family structure. However, in the national literature, a small number of studies which involved the fathers were done (Karaaslan, 2016a, 2016b; Kucuker, Bakkaloglu and Sucuoglu, 2001; Mavis, 2004; Taskin and Erkan, 2009). In this context, in our study, it can be thought that fathers spending more time in their houses made them spend more time with their children during the Covid-19 pandemic.

Other positive results obtained from the study about language and communication are; children started and maintained the communication and preferred to speak more, increase the amount of the words they use, increase in taking commands, and finally they started to make new sounds. Language and communication form a network that feeds each other and progresses through a chain system. When the literature was investigated, it was found that children with ASD were inadequate in their interactions with their parents (Adamson et al., 2012). However, Toret et al. (2015) stated that some parents reported that their children were adequate in starting and maintaining the playing interactions. Boucher (2003) stated that children with ASD who have functional language skills can form different words, new words and speech acts even if they incorrectly use the words and speech acts. Covid-19 process made Children with ASD spend more time with their families and allowed them to interact with each other more. Thus, it can be thought that more opportunities arise for children to speak; therefore, they started to use more words.

Another result obtained from mothers' opinions about social-emotional development is that children increased their peer interactions during the pandemic. Although the closure of special education centers due to Covid-19 pandemic prevented group activities, mothers stated that they knew their 'children's social problems and therefore they brought them together more with their peers. It can be thought that this systematic effort may have benefitted the increase in peer interactions. In examining the studies in the literature, it was found that play time and success in play increased in children with ASD who were matched with their normally developing peers (Carter, Cushing, and Kennedy, 2009). When the studies about peer interaction are examined, Mason et al. (2014) found that peer interaction increased the communication skills of children with autism. Another study found that initiating, maintaining, and chatting time increased and they preferred to talk (Bambara et al., 2016). One of the most important problems of individuals with ASD suffer from is the difficulties they experience in the social settings. For this reason, peer interactions are crucial for them to continue their lives with a social identity. Gardner et al. (2014) stated that children with ASD who have been provided with peer interactions at school participated more in in-class events activities and were more involved in social processes. While the studies show that social interaction increases social skills on individuals with ASD, it is seen in this study that mothers especially planned to bring their children together with their peers for socialization, and as a result, they stated that there was an improvement in their social skills. The studies carried out during the pandemic are limited in the field of social development. It is foreseen that our study will be a source for the literature since the study includes the importance of socialization and emphasizes peer interaction. When the views of mothers on the negative effects of the Covid-19 pandemic on children with ASD are examined; it was found that suspension of special education causes children to show many behavior problems. It is known that repetitive and restricted behaviors (Lewis and Bodfish, 1998; Matson et al., 2009) and emotional and behavioral problems (Gray et al., 2012) are observed in children with ASD. Most parents reported that their children exhibited problematic behaviors, repetitive behaviors, and restricted behaviors. The most common behaviors observed were: making senseless sounds, hitting the person in front of them, crying, getting angry, then biting others, and finally showing limited attention to objects. Considering results of the related studies, they support the findings of this study; parents who have a child with autism reported that their child showed repetitive behaviors and problematic behaviors (Keenan et al., 2010; Hall and Graff, 2012; Ho et al., 2012; Tsai, Tsai and Shyu, 2008). In addition to this, other research findings (Ho et al., 2012) support that the most frequently reported behavioral problems by families were verbal and bodily anger and destructive behaviors, and these behaviors occurred more intensely in the home environment than in other environments. Many studies on problematic behaviors were carried out during the pandemic, and the results were shared. For example, it has been reported that repetitive and restricted behaviors of children with ASD increased during the pandemic in Italy (Di-Renzo et al., 2020). Similarly, in their study, Neece et al. (2020) concluded that the most challenging situation during the pandemic for families with special needs is behavioral problems. In the study, conducted with mothers about experience during the Covid-19 pandemic, it was concluded that there was an increase in the children's problematic behaviors and they failed to control their anger. These behavior problems were listed

as; hitting themselves, slamming the door, throwing themselves on the floor and hitting their heads, they showed these behaviors especially when they do not get what they want (Karahana et al., 2021). Again, in the same study, mothers reported that behavioral problems increased with the prolongation of the time they stayed at home and the disruption of their children's routines. It is also known that during the pandemic people with ASD had problems in communication and their stereotypical, aggressive behaviors and ticks were increased (Mutluer et al., 2021). Considering that similar results were obtained in this study and that the time spent at home increased due to curfews, it is suggested that the behavioral problems of children with ASD may have increased due to situations such as blockages, staying in one place for a long time, and the impossibility to fulfill daily routines.

Another finding of the study is that during the pandemic, the relationship between children with ASD and their siblings deteriorated, they started to fight with their father, and their dependence on their mother increased. Harris and Glasberg (2003) examined the relationship between children with autism and their siblings found that having a child with ASD in a family negatively affected the relationship between siblings. In the same study, it was reported that normally developed children who have a sibling with ASD found their sibling's lack of interest in play surprising and hurtful, so that their desire to relate to their sibling ceased and they directed their energy elsewhere. In studies comparing normally developing siblings of children with autism and Down syndrome, it has been reported that siblings of children with autism have less prosocial behavior patterns, show more hostile behaviors, have fewer positive feelings towards their siblings, and spend less time with their siblings (Knott et al., 1995; Orsmond and Seltzer, 2007). Similar results were found in our study; mothers reported that relationship between their child with ASD and their siblings deteriorated during the pandemic. In another study, mothers stated that they observed that the communication between siblings was impaired during the pandemic, and that the time spent at home negatively affected the sharing and positive interaction between siblings (Karahana et al., 2021). Similar results were found in our study, the participants stated that the relationship between children with autism and their siblings deteriorated during the pandemic period. Due to curfews and being stuck in a limited space might have affected the space, playground, studying, sharing toys and being alone in the spare time. These factors may have negatively affected the relationship between siblings. There are also conflicting reports from participants. There are mothers who say that their child has developed positive relationships with his siblings. The difference in behaviors might be caused by characteristics of siblings, characteristics that may affect social life of a child with ASD, age difference between siblings and factors like these. In the literature review on the topic of fighting with the father, it was seen that the studies with fathers were limited. A study concluded that fathers interact less with their children, use less expressive language, and enjoy spending time together less than mothers (Oksuz, 2008). Considering the study findings and the information in the literature, It can be said that fathers interacted less with their children, their use of expressive language was weak, they enjoyed spending time with their children less and the mandatory stay at home due to the

pandemic worsened these processes and it caused more conflict with children with autism.

Education has essential place for children, but the education of children with special needs is a compulsory and very important need. It is thought that suspension of special education during the Covid-19 pandemic had an impact on the cognitive development of children. Covid-19 pandemic had a powerful effect on the everyday lives of families worldwide, especially the parents who have a child with ASD. It is thought that being deprived of supportive educational programs like applied behavioral analysis and not getting personal education support may have negatively affected the education of children with ASD (Tarbox et al., 2020). Continuing education from distance during the pandemic can be very difficult and devastating for children with ASD and their parents. The participants in the study reported a decline in their children's children's cognitive development. This decline in cognitive development was seen on the following areas; forgetting previously learnt concepts, forgetting letters, decline in reading, and decline in skill acquisition. Majoko and Dudu (2020), reported that parents were confused about managing activities and doing educational activities, also, they reported that they had difficulties with adaptation during the pandemic. Aydemir (2021) examined the problems of mothers of children with special needs during the covid-19 pandemic, and it was concluded that most of the participants believed that experts were more effective on their 'children's education and mothers stated that they were inadequate about education of their children. In the qualitative study conducted by Yazcayir and Gurgur (2021) with the families of children with special needs receiving inclusive education, families mentioned that they had to carry out their children's education at home without the support of an institution or specialist, the learning process was negatively affected due to the lack of student-teacher interaction, an important learning gap has arisen due to the prolongation of the pandemic process. Studies and the findings of this study have also shown that suspension of special education was very unusual and challenging for the families.

The increase in the amount of time children spend at home due to the pandemic has also resulted in movement restrictions for children. In this study, the mothers indicated that the children's movements were restricted during this process. Physical activity is one of the most important parameters in the lives of children with ASD. Some studies have found that regular exercise has positive effects on social, behavioral, cognitive, and motor disorders in children with ASD (Srinivasan et al., 2014; Sowa and Meulenbroek, 2012; Attwood, 1998). It is emphasized that the revised physical activities and exercise have a positive effect on the physical and motor development (Pitetti vd., 2007), mental skills (Anderson-Hanley vd., 2011), repetitive behaviors (Bahrami vd., 2012) and academic skills (Nicholson vd., 2011) of individuals with ASD, therefore physical activity is crucial for individuals with ASD (Srinivasan et al., 2014; Sowa and Meulenbroek, 2012; Attwood, 1998). During the pandemic, individuals with ASD tried to adapt to online education by staying at home due to restrictions and were included in the developmentally risky group as a result of physical inactivity (Narsizi, 2020; Yarimkaya and Esenturk, 2020). WHO (2020) has stated that it is important to perform physical

activities to protect physical health and decrease behavioral problems of children with special needs during the pandemic process. According to the results of this study, it is possible to say that the necessity of learning loss due to school closures during the covid-19 pandemic and the restrictions on going out have a multifaceted effect due to minimizing both education and motor activity levels of children.

The pandemic increased the time spent at home and caused children with ASD to take a break from the special education. With the break, staying away from educational environments which provided peer interactions and staying at home has distanced children from their friends. Studies conducted with children with ASD showed that individuals with autism and others experienced a delay and impairment in recognizing emotional expressions (Harms et al., 2010). Areas such as initiating and maintaining interaction, empathy, understanding emotions, language skills are necessary for communication and problems in these areas significantly reduce peer interactions of individuals with autism. Considering the developmental characteristics of children with ASD, it is known that they experience limitations in social interactions and these limitations are one of the first causes of social adjustment problems (Hobson, 1996; Koegel et al., 1992). In the study of special education from the perspective of teachers and parents during the pandemic, it was found that parents cited their children's desire to go out as a negative aspect of the suspension of special education, and it was reported that they were unable to socialize due to the inability to go out in social settings (Senol ve Yasar, 2020). As a result of this study, it was seen that peer interactions of children with ASD, who had social relationship difficulties even under normal conditions, decreased due to the interruption of education.

From the results of our study, according to mothers' views on the use of technological tools, children watched more television and spent more time on the phone during the pandemic. In the study conducted by Chonchaiya et al. in 2011, three groups of children (autism, language delay and control group) were examined in terms of the history of children's first exposure to the screen and the relationship between interactive socialization and it was found that the autistic group formed the group that met the screen the earliest (6 months) and watched television the most, and that the age of meeting the screen was later in the children with normal development. A child with ASD is not oriented towards the social world that surrounds them, but instead is impressed by non-social images, sounds, and audio-visual synchronization. The person who is not attracted to a social partner misses out on various learning opportunities. In the study of Kamasak et al. (2020), it was shown that there was a relationship between the time spent during watching television, using a mobile phone, using a tablet, and autism. It was determined that the rate of spending more than four hours watching TV in the autism group was 42.4%, and the rate of screen exposure was significantly higher than the other groups, with an average of 1-3 hours in tablet and phone usage times. In the current study, it can be assumed that children who already spend more time with technological devices tend to use devices such as tablets, TVs, and cell phones more, which may be due to the fact that they are more bored at home and the activities to be done are exhausted after a while due to curfews and being forced to stay at home.

When mother's views are examined, it was seen that other negative effects were related to communication and language development. According to the mothers' opinions, it was concluded that there was a decrease in the speech of the children and the number of words they used. One of the diagnostic criteria for ASD is having difficulties in language and communication (APA, 2013). The language and communication problems experienced by children with ASD, which emerge in the early period, also negatively affect many developmental areas (Landa, 2007). While some of the children with ASD do not speak at all, some of them can only be observed to have imitative speech or speech that is close to the speech of children with normal development (Owens et al., 2003). In autism, some difficulties may arise as language and communication problems, such as difficulties in understanding words and sentences, difficulties in understanding words that can have different meanings, in understanding symbolic expressions, and difficulties in social use of language like adjusting the tone of voice and speaking out of context (Korkmaz, 2005). For this reason, theoretical or applied studies on language and communication skills of children with ASD are very important. It is known that children with ASD need support in language development, and it can be said that suspension of special education caused regression for children receiving language-speech support and it is thought that lack of professional support caused these situations.

According to information gathered from mothers, it was found that children started to eat more. It is stated that prevalence of autism with at least one co morbid condition was 72.5% (Goldschmidt, 2015). Eating disorders, stomach and intestinal problems, epilepsy and obesity were the most seen co morbid conditions (Castro, 2015; Napoli, 2014). It was discovered that 90% of the children with ASD had problems with nutrition (Kodak & Piazza, 2008). It is known that the high rate of nutritional problems in children with ASD is due to food choices, biological food allergies, social adaptation problems, reaction to new foods, and physiological problems (Stough, 2015). Kral et al. (2013) reported that children with ASD are more likely to choose food and refuse new foods than children without ASD. In the study conducted by Stankovic et al. (2020), it was concluded that the families of children with ASD faced difficulties with their 'children's diets, that problem behaviors emerged due to the children being selective and determined to eat the same meals, thus, the families stated that they felt inadequate in this regard. Studies showed that children with autism tended to gain weight more and prevalence of obesity was higher than their normally developing peers (Napoli et al., 2014; Hyman et al., 2012; Evans et al., 2012). Similarly, in this study, participants revealed that their children with ASD who took a break on their special education due to pandemic showed an increase in their eating behavior and it was reported that they put on weight. The increase in problems related with nutrition during covid-19 pandemic was an expected result. It is also believed that the boredom of children who do not have the opportunity to use their time at home wisely supports their tendency to eat. Also, it is thought that the boredom of children who do not have the chance to use their time at home in a quality may also supported their tendency to eat.

In summary, it was seen that the COVID-19 pandemic and the compulsory suspension of special education had many positive and negative effects on children with ASD. From

the information gathered from mothers, it was revealed that a situation which is considered positive for some children had negative consequences for other children. Negative effects were reported more than the positive effects in the study. It was concluded that no situations would make a difference between the positive and negative themes obtained by demographic variables (parental age, education level, number of children, age of children with ASD). In this context, it is thought that it is important to consider the family structure, attitudes and behaviors towards the child, economic conditions, the degree of ASD, and the family's communication-interaction style with the child.

According to the results obtained from the study, the following recommendations can be made.

- It has been shown that absence from special school causes various problems for children. These problems include the emergence of behavior problems or reinforcement of behavior problems that the children already had, feeding problems, movement limitations, communication problems, and a decline in language development. Strategies should be developed to continue educational support for children with ASD as much as possible.
- The study group of the investigation consists of children with ASD. The study may be conducted with a group that has a different diagnosis.
- Demographic variables may be changed or expanded to provide more detailed information.
- Mothers' experiences can also be considered to gather more information in another study.
- By narrowing the age range, it is possible to study the behavioral changes of children with ASD who are at the beginning of their special education.

Ethics Committee Approval: Ethics committee approval was obtained from T.C Istanbul Medeniyet University Educational Sciences Ethics Committee with the decision numbered 2020/01-02 on 21.09.2020.

Informed Consent: Informed consent formula was obtained from the participant mothers.

Peer-review: Externally peer-reviewed.

Authors' Contributions: Concept- D.A.D., E.G.; Design- D.A.D., E.G.; Data collection- D.A.D and Processing -D.A.D., E.G.; Supervision – E.G.; Data analysis and interpretation – D.A.D., E.G.; Literature review – D.A.D; Writing – D.A.D., E.G.; Critical Review -All authors

Conflict of Interests: There is no conflict of interest as the authors

Financial Disclosure: No financial support was received for the research.

Kaynaklar

- Adamson, L.B., McArthur, D., Markov, Y., Dunbar, B. & Bakeman, R. (2001). Autism and Joint Attention: Young 'children's responses to maternal bids. *Journal of Applied Developmental Psychology*, 22(4), 439– 453.
- American Psychiatric Association (APA). (2013). Diagnostic and Statistical Manual of Mental Disorders (DSM-V): Amerikan Psikiyatri Birliđi, DSM-5 tanı ölçütleri basvuru el kitabı (Cev.: E. Koroglu). Boylam Psikiyatri Enstitüsü Hekimler Yayın Birliđi.
- Anderson-Hanley, C., Turek, K. & Schneiderman, R. L. (2011). Autism and exergaming: effects on repetitive behaviors and cognitions. *Psychology Research and Behavior Management*, 4, 129-137. doi: 10.2147/PRBM.S24016.
- Attwood, T. (1998). *Asperger's sendrome: a guide for parents and professionals*. Jessica kingsley publishers Ltd.
- Aydemir, E. (2021). Kuresel Salgın Bağlamında Özel Gereksinimli Çocuk Sahibi Ebeveynlerin Yasadığı Sorunlar (Sađlık, Eđitim, Ekonomi ve Sosyal). *İstanbul Sabahattin Zaim Üniversitesi Sosyal Bilimler Dergisi*, 9(18), 1-12.
- Bahrami, F., Movahedi, A., Marandi, S. M., & Abedi, A. (2012). Kata techniques training consistently decreases stereotypy in children with autism spectrum disorder. *Research in Developmental Disabilities*, 33(4), 1183-1193. doi: 10.1016/j.ridd.2012.01.018
- Bambara ML., Cole LC., Kunsch C., Tsai SC., Ayad E. (2016). A peer-mediated intervention to improve the conversational skills of high school students with autsm spectrum disorder. *Research in Autism Spectrum Disorders*. 27: 29-4.
- Baykoc, N. (Eds.). (2015). *Özel gereksinimli çocuklar ve özel eğitim*. (3.baskı). Eđiten Kitap.
- Boucher, J. (2003). Language development in Autism. *International Otorhinolaryngol*. doi: 10.1016/j.ijporl.2003.08.016. PMID: 14662187.
- Bozkurt, A., Jung, I., Xiao, J., Vladimirschi, V., Schuwer, R., Egorov, G., Lambert, S. R., Al-Freih, M., Pete, J., Olcott, Jr., D. Rodes, V., Aranciaga, I., Bali, M., Alvarez, Jr., A. V., Roberts, J., Pazurek, A., Raffaghelli, J. E., Panagiotou, N., de Coëtlogon, P. & Paskevicius, M. (2020). A global outlook to the interruption of education due to COVID-19 pandemic: Navigating in a time of uncertainty and crisis. *Asian Journal of Distance Education*, 15(1), 1-126. <https://doi.org/10.5281/zenodo.3878572>
- Carter, E. W., Cushing, L. S. & Kennedy, C. H. (2009). *Peer support strategies: Improving all 'students' social lives and learning*. Baltimore, MD: Paul H. Brookes.
- Castro K, Faccioli LS, Baronio D, Gottfried C, Perry IS, Dos Santos Riesgo R. (2015). Effect of a ketogenic diet on autism spectrum disorder: A systematic review. *Research Autism Spectrum Disorder*; 20:31-38.
- CDC (Centers for Disease Control and Prevention). (2007). Prevalence of autism spectrum disorders--autism and developmental disabilities monitoring network, six sites, United States, 2000. Morbidity and mortality weekly report. Surveillance summaries (Washington, DC: 2002), 56(1), 1-11.
- Chonchaiya W, Nuntnarumit P, Pruksananonda C. (2011). Comparison of television viewing between children with autism spectrum disorder and controls. *Acta Paediatr*, 100(7):1033-7. doi:10.1111/j.1651-2227.2011.02166.x
- Creswell, J. W. (2013). *Qualitative inquiry & research design – Choosing among five approaches*. (Çev.: M. Bütün ve S. B. Demir). Ankara: Siyasal.
- Colizzi, M., Sironi, E., Antonini, F., Ciceri, M. L., Bovo, C. ve Zoccante, L. (2020). Psychosocial and behavioral impact of Covid-19 in autism spectrum disorder: An online parent survey. *Brain Sciences*, 10, 341, 1-14.
- Cooper, J. O., Heron, T. E., & Heward, W. L. (1987). *Applied behavior; analysis*. Columbus, Ohio: Merrill.
- Di-Renzo, M., Di-Castelbianco, B., Vanadia, E., Petrillo, M., D'Errico, S., Racinaro, L. vd. (2020). Parent-reported behavioural changes in children with autism spectrum disorder during the COVID-19 lockdown in Italy. *Continuity in Education*, 1(1), 117- 125.

- Dyson, L. & Fewell, R.R. (1989). The Self-concept of Siblings of Handicapped Children: A Comparison. *Journal of Early Intervention*, 13 (3), 230-238.
- Er, M. (2006). Çocuk, hastalık, anne-babalar ve kardeşler. *Cocuk Sağlığı ve Hastalıkları Dergisi*, 49(2), 155-168.
- Ersoy, F. (2016). Fenomenoloji. A. Saban ve A. Ersoy (Ed.). *Eğitimde nitel araştırma icinde* (s. 51- 105). Anı Yayıncılık.
- Ercan, E. S., Arman, A. R., Emiroglu, N. İ., Oztop, D. B. & Yalcın, O. (2020). Türkiye çocuk ve genç psikiyatrisi derneği Covid-19 (korona) virus salgını sırasında aile, çocuk ve ergenlere yönelik psikososyal ve ruhsal destek rehberi. Erisim tarihi:12.05.2020
- Evans, E.W., Must, A., Anderson, S.E., Curtin, C., Scampini, R., Maslin, M. (2012). Dietary patterns and body mass index in children with autism and typically developing children. *Res Autism Spectrum Disorder*, 6, 399-405.
- Evans, S., Mikocka-Walus, A., Klas, A., Olive, L., Sciberras, E., Karantzas, G. vd. (2020). From 'It has stopped our 'lives' to 'Spending more time together has strengthened 'bonds': The varied experiences of Australian families during COVID-19. *Frontiers in Psychology*, Erisim adresi: <https://doi.org/10.3389/fpsyg.2020.588667>.
- Fountain, C., King, M. D., & Bearman, P. S. (2011). Age of diagnosis for autism: individual and community factors across 10 birth cohorts. *Journal of Epidemiology & Community Health*, 65(6), 503-510.
- Gardner, K. F., Carter, E. W., Gustafson, J. R., Hochman, J. M., Harvey, M. N., Mullines, T. S., & Fan, H. (2014). Effects of peer networks on the social interactions of high school students with autism spectrum disorders. *Research and Practice for Persons*, 39(2), 100-118.
- Goldschmidt J, Song H.J. (2015). At-risk and underserved: A proposed role for nutrition in the adult trajectory of autism. *J Acad Nutr Diet*, 115, 1041-1047.
- Gray, K., Caroline, K., Taffe, J., Brereton, A., Stewart., E. ve Bruce, T. (2012). Trajectory of behavior and emotional problems in autism. *American Journal on Intellectual and Developmental Disabilities*, 117(2), 121-133.
- Guterres, A. (2020, 16 April). Protect our children. United Nations. <https://www.un.org/en/un-coronavirus-communications-team/protect-our-children>.
- Hansen, S. N., Schendel, D. E., & Parner, E. T. (2015). Explaining the increase in the prevalence of autism spectrum disorders: the proportion attributable to changes in reporting practices. *JAMA pediatrics*, 169(1), 56-62.
- Hall, H. R., & Graff, J. C. (2012). Maladaptive behaviors of children with autism: Parent support, stress, and coping. *Issues in Comprehensive Pediatric Nursing*, 35(3-4), 194-214.
- Harris, S. L. ve Glasberg, B.A. (2003). *Siblings of Children with Autism: A Guide for Families*. Bethesda: Woodbine House.
- Harms, M. B., Martin, A., & Wallace, G. L. (2010). Facial emotion recognition in autism spectrum disorders: A review of behavioral and neuroimaging studies. *Neuropsychology Review*, 20 (3), 290-322.
- Ho, B.P.V., Stephenson, J. ve Carter, M. (2012). Anger in children with autism spectrum disorder: 'Parent's Perspectives. *International Journal of Special Education*, 27, 14-32.
- Holloway, I., & Wheeler, S. (1996). *Qualitative research for nurses*. Oxford: Blackwell.
- Hobson, R. P. (1996). *Autism and the Development of the Mind*. Manwah, NJ: Lawrence Erlbaum Associates.
- Hyman, S. L., Stewart, P. A., Schmidt, B., Lemcke, N., Foley, J. T., Peck, R., & Ng, P. K. (2012). Nutrient intake from food in children with autism. *Pediatrics*, 130(2), S145-S153.
- Ince Parpucu, T., Suzen, İ., & Parpucu, H. S. (2021). Otizm spektrum bozukluğu olan çocuklarda Covid-19 öncesi ve sırasında fiziksel aktivite seviyelerinin karşılaştırılması. Isparta Otizm Kongresi, Erisim tarihi: 12.05.2020, <http://acikerisim.antalya.edu.tr/handle/20.500.12566/69>
- Karaaslan, O. (2016a). Comparison of social engagement of children having disabilities with their mothers and fathers. *Educational Sciences: Theory & Practice*, 16(5), 1649-1670.
- Karaaslan, O. (2016b). A comparasion of social engagement of children with autism with their mothers and fathers. Paper presented at the meeting of the International Conference on New Horizons in Education (INTE), Vienna, Austria.

- Karahan, S., Yildirim Parlak, S., Demiroz, K., Kaya, M. ve Kayhan, N. (2021). Annelerin Koronavirüs (COVID-19) sürecinde özel gereksinimli çocuklarının problem davranışları ile baş etme deneyimleri. *Journal of Qualitative Research in Education*, 25, 79-105. doi: 10.14689/enad.25.4
- Kamasak, T., Direk, M., Tugba, K. U. R. T., & Karaman, S. (2020). Otizmli çocuklarda doğum öyküsü, anne sütü alma süresi, televizyon ile tanışma yaşı, televizyon, akıllı telefon ve tablet kullanım alışkanlıklarının incelenmesi. *Kırıkkale Üniversitesi Tıp Fakültesi Dergisi*, 22(3), 411-417.
- Keenan, M., Dillenburg, K., Doherty, A., Byrne, T. ve Gallagher, S. (2010). The experiences of parents during diagnosis and forward planning for children with autism spectrum disorder. *Journal of Applied Research in Intellectual Disabilities*, 23(4), 390-397.
- Knott, F., Lewis, C. ve Williams, T. (1995). Sibling interaction of children with learning disabilities: A comparison of autism and Down's syndrome. *Journal of child psychology and psychiatry*, 36(6), 965-976.
- Koegel, L. K., Koegel, R. L., Hurley, C., & Frea, W. D. (1992). Improving social skills and disruptive behavior in children with autism through self-management. *Journal of Applied Behavior Analysis*, 25, 341-353.
- Kodak T., Piazza, C., C., (2008). Assessment and behavioral treatment of feeding and sleeping disorders in children with autism spectrum disorders. *Child and Adolescent Psychiatric Clinics of North America*. 17 (4): 887-905.
- Korkmaz, B. (2005). *Dil ve beyin*. İstanbul: Yuce yayım.
- Kral, T., Eriksen, W., Souders, M., Pinto-Martin, J. (2013). Eating behaviors, diet quality, and gastrointestinal symptoms in children with autism spectrum disorders: A brief review. *Journal of Pediatric Nursing*, 28(6), 548-56.
- Kucuker, S., Bakkaloglu, H., & Sucuoglu, B. (2001). Erken eğitim programına katılan gelişimsel geriligi olan çocuklar ve anne-babalarının etkileşim davranışlarındaki değişimin incelenmesi. *Ozel Eğitim Dergisi*, 3(1), 61-71.
- Landa, R. (2007). Early communication development and intervention for children with autism. *Mental Retardation and Developmental Disabilities*, 13(1), 16-25.
- Lewis, M.H. & Bodfish, J.W. (1998). Repetitive behavior disorders in autism. *Mental Retardation and Developmental Disabilities Research Reviews*, 4, 80-89.
- Maenner M. J, Shaw K. A, Baio J. (2020). Prevalence of autism spectrum disorder among children aged 8 years-autism and developmental disabilities monitoring network, 11 sites, United States, 2016. *MMWR Surveillance Summaries*, 69:1-12.
- Majoko, T. ve Dudu, A. (2020). Parents' strategies for home educating their children with autism spectrum disorder during the Covid-19 period in Zimbabwe. *International Journal of Developmental Disabilities*, Erişim adresi: <https://doi.org/10.1080/20473869.2020.1803025>
- Marcenko, M. O. & Meyers, J. C. (1991). Mothers of Children with Developmental Disabilities: Who Shares the Burden? *Family Relations*. (40), 186-190
- Mason, R., Kamps, D., Turcotte, A., Cox, S., Feldmiller, S., & Miller, T. (2014). Peer mediation to increase communication and interaction at recess for students with autism spectrum disorders. *Research in Autism Spectrum Disorders*, 8(3),334-344. doi: 10.1016/j.rasd.2013.12.014.
- Matson, J.L., Dempsey, T. ve Fodstad, J.C. (2009). Stereotypies and repetitive/restrictive behaviors in infants with autism and pervasive developmental disorder. *Developmental Neurorehabilitation*, 12, 122-127.
- Mavis, İ. (2004). Türk anne-babaların çocuklarıyla etkileşim profili, özel eğitimden yansımalar [Interaction profile of Turkish parents with their children, reflections from special education]. 13. Ulusal Özel Eğitim Kongresi'nde sunulan sözlü bildiri, Eskisehir.
- Meneer, K. S., & Neumeier, W. H. (2015). Promoting physical activity for students with autism spectrum disorder: Barriers, benefits, and strategies for success. *Journal of Physical Education, Recreation & Dance*, 8(3), 43-48. doi: 10.1080/07303084.2014.998395.
- Motavalli Mukaddes, N. (2017). *Bebeklikten erişkinliğe otizm: Aileler için kılavuz*. İstanbul: Nobel Tıp Kitapevleri.
- Mutluer, T., Doenyas, C. ve Aslan-Genc, H. (2020). Behavioral implications of the COVID-19 process for autism spectrum disorder, and 'individuals' comprehension of and reactions to the pandemic conditions. *Frontiers in Psychiatry*, 11, 561882.

- Napoli E, Dueñas N, Giulivi C. (2014). Potential therapeutic use of the ketogenic diet in autism spectrum disorders. *Frontier Pediatrics*, 2:(69-74).
- Narzisi, A. (2020). Handle the autism spectrum condition during Coronavirus (COVID-19) stay at home period: Ten tips for helping parents and caregivers of young children. *Brain Sciences*, 10 (4), 1-4. <https://doi.org/10.3390/brainsci10040207>.
- Neece, C. McIntyre, L. L. ve Fenning, R. (2020). Examining the impact of COVID-19 in ethnically diverse families with young children with intellectual and developmental disabilities. *Journal of Intellectual Disability Research*, 64(10), 739- 749.
- Nicholson, H., Kehle, T. J., Bray, M. A., & Van Heest, J. (2011). The effects of antecedent physical activity on the academic engagement of children with autism spectrum disorder. *Psychology in the School*, 48(2), 198-213. doi: 10.1002/pits.20537
- Orsmond, G. I., Seltzer, M. M. (2007). Siblings of individuals with autism or Down syndrome: Effects on adult lives. *Journal of Intellectual Disability Research*, 51 (9), 682–696. <https://doi.org/10.1111/j.1365-2788.2007.00954>.
- Owens, R. E., Evan-Metz, D. E., & Haas, A. (2003). *Introduction to communication disorders: A life span perspective* (2nd ed.). Upper Saddle River, NJ: Pearson. Education Inc.
- Oksuz, Z. (2008). *Otistik ve normal cocuk sahibi anne babaların bazı psikiyatrik ve psikolojik ozelliklerinin karsilastirilmesi*. (Yayımlanmamış Yüksek Lisans Tezi). Marmara Üniversitesi Eğitim Bilimleri Enstitüsü.
- Pacheco, L.F., Noll, M. & Mendonca, C.R. (2020). Challenges in teaching human anatomy to students with intellectual disabilities during the Covid-19 pandemic. *Anatomical Sciences Education*, 13(5), 556-557.
- Pitetti, K. H., Rendoff, A. D., Grover, T., & Beets, M. W. (2007). The efficacy of a 9-month treadmill walking program on the exercise capacity and weight reduction for adolescents with severe autism. *Journal of Autism and Developmental Disorders*, 37(6), 997-1006. doi: 10.1007/s10803-006-0238-3.
- Powell, T. H. ve Gallagher, P. A. (1993). *A Special Part of Exceptional Families*. Baltimore: Paul H. Brookes Publishing.
- Rose, J., Willner, P., Cooper, V., Langdon, P. E., Murphy, G. H. ve Kroese, B. S. (2020). The effect on and experience of families with a member who has intellectual and developmental disabilities of the COVID-19 pandemic in the UK: developing an investigation. *International Journal of Developmental Disabilities*, Erisim adresi: <https://doi.org/10.1080/20473869.2020.1764257>.
- Sahin, E., Oz, A. O., & Singin, R. H. O. (2020). Covid-19 pandemi surecinin otizm spektrum bozuklugunda motor becerilere etkisi. International Eurasian Educational Rresearch Congress (Ozet bildiri). Erisim tarihi 23.06.2021. <https://www.ejercongress.org>.
- Sandalcı, B., Uyaroglu, O. A., & Guven, G. S. (2020). Covid-19’da kronik hastalıkların rolu, onemi ve oneriler. *Flora*, 25(5).
- Sowa, M. & Meulenbroek, R. (2012). Effects of physical exercise on autism spectrum disorders: a meta-analysis. *Research Autism Spectrum Disorder*, 6:46 –57.
- Srinivasan, S. M., Pescatello, L. S., & Bhat, A. N. (2014). Current perspectives on physical activity and exercise recommendations for children and adolescents with autism spectrum disorders. *Physical Therapy*, 94(6), 1-46. doi: 10.2522/ptj.20130157.
- Stankovic, M., Jelena, S., Stankovic, M., Shih, A., Stojanovic, A., & Stankovic, S. (2020). The Serbian experience of challenges of parenting children with autism spectrum disorders during the COVID-19 pandemic and the state of emergency with the police lockdown. Available at SSRN 3582788. <http://dx.doi.org/10.2139/ssrn.3582788>
- Stough, C.O., Dreyer Gillette, M.L., Roberts, M.C, Jorgensen, T.D., Patton, S.R. (2015) Mealtime behaviors associated with consumption of unfamiliar foods by young children with autism spectrum disorder. *Appetite*, 95, 324-333.
- Senol, F. B., & Yasar, M. C. (2020). Covid-19 Pandemisi Surecinde Ogretmen ve Ebeveyn Gozunden "Ozel Egitim". *Milli Egitim Dergisi*, 49(1), 439-458.
- Tarbox, C., Silverman, E. A., Chastain, A. N., Little, A., Bermudez, T. L., & Tarbox, J. (2020). Taking Action: 18 Simple Strategies for Supporting Children with Autism During the COVID-19 Pandemic. *Behavior Analysis in Practice*, 14(4), 1099-1127.

- Taskin, N., & Erkan, S. (2009). Babalara verilen eğitimin babaların çocuklarıyla ilgilenmelerine etkisi: Deneysel bir çalışma (The influence of father education programs on the levels of father involvement with children: An experimental study). *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 37(37), 136-148.
- Toret, G., Ozdemir, S., & Ozkubat, U. (2015). Ciddi düzeyde otizm spektrum bozukluğu olan çocuklar ile annelerinin ebeveyn-cocuk etkileşimlerinin ebeveyn ve çocuk davranışları açısından incelenmesi. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Özel Eğitim Dergisi*, 16(01), 1-28.
- Tsai, W., Tsai, J., Shyu, Y.L. (2008). Integrating the nurturer-trainer roles: Parental and behavior/symptom management processes for mothers of children with autism. *Social Science and Medicine*, 67(11), 798-1806.
- Turan, A., & Celikyay, H. H. (2020) Türkiye’de Kovid-19 ile Mücadele: Politikalar ve Aktörler. *Uluslararası Yönetim Akademisi Dergisi*, 3(1), 1-25.
- Dunya Sağlık Örgütü (DSO) (2020). Statement on the second meeting of the International Health Regulations (2005) Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV). [http://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-\(2005\)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-\(2019-ncov\)](http://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov)).
- Yassibas, U., & Colak, A. (2019). Otizm spektrum bozukluğu olan cocuga sahip anne-babaların yaşam deneyimlerine derinlemesine bakış. *Eğitim ve Bilim*, 44(198).
- Yarimkaya, E., & Esenturk, O. K. (2020a). Promoting physical activity for children with autism spectrum disorders during Coronavirus outbreak: benefits, strategies, and examples. *International Journal of Developmental Disabilities*. <https://doi.org/10.1080/20473869.2020.1756115>.
- Yazcaayir, G., ve Gurgur, H. (2021). Students with special needs in digital classrooms during the COVID-19 pandemic in Turkey. *Pedagogical Research*, 6(1), 1-10.
- Yersel, B. O., Akbas, A., & Durualp, E. (2020). Pandemi Sürecinde Özel Gereksinimli Çocukların Günlük Yaşam Aktiviteleri. *Avrasya Sosyal ve Ekonomi Araştırmaları Dergisi*, 8(1), 126-145.
- Yildirim, A. & Şimşek, H. (2016). *Sosyal bilimlerde nitel araştırma yöntemleri*. Seçkin Yayıncılık.

Authors**Contact**

Res. Asst. Duygu ARICI DOĞAN
Child Development

Biruni University
Faculty of Health Science
Istanbul

E-mail: ddogan@biruni.edu.tr

Asst. Prof. Ertan GORGU
Basic education

Istanbul Medeniyet University
Faculty of Education Science Istanbul

E-mail: ertangorgu@gmail.com