



Children's Technology Use during the Pandemic Period¹

Pandemide Çocukların Teknoloji Kullanımı¹

Ramazan DULKADİR², Nihal DULKADİR YAMAN³, Fatih YAMAN⁴

Article Type⁵: Research Article

Application Date: 03.03.2023

Accepted Date: 13.10.2023

To Cite This Article: Dulkadir, R., Dulkadir Yaman, N. & Yaman, F. (2023). Children's technology use during the pandemic period. *Anadolu University Journal of Education Faculty (AUJEF)*, 7(4), 970-986.

ABSTRACT: The COVID-19 pandemic has caused people to stay home all over the world. People started to perform their daily tasks remotely. Due to staying at home, the use of technology increased, and people began to live in a digital environment. This situation has started to cause problems in young people as well as adults. During the pandemic, children experienced social and psychological consequences, including a decrease in social activities, an increased desire to use technological devices, aggression towards their family and surroundings, a decreased desire to play with friends, and becoming quieter and more introverted. In this context, the aim of this study is to determine the usage patterns, reasons, and resulting consequences of children's excessive use of technology during the pandemic. The study was designed based on a survey model. For this purpose, a measurement tool developed by the researchers was used, and data were collected from 132 parents. The participants' educational levels were generally at the undergraduate level (62%). Descriptive statistics (% , f , \bar{x} , sd), Mann Whitney U test and Kruskal Wallis H test were used in the analysis of the data. As a result of the analyses, the most significant finding of the study is that children spent a significant amount of time with technological devices during the pandemic and this had a negative impact on their sleep patterns and physical health. It was determined that there was no significant difference in parents' situations in terms of variables such as gender, educational level and internet use experience. However, there was a significant difference in terms of the number of children they had. It was found that problems related to excessive technology use in children occurred. In this regard, families have certain responsibilities. Parents are primarily responsible for protecting their children from the effects of technology. Training programs can be developed for parents to fulfill these responsibilities and become conscious parents. Parents can direct their children towards physical activities and spend more time with them.

Keywords: Technology use of children, children in the pandemic, excessive use of technology

¹ The study was presented as a paper at the 14th International Computer and Instructional Technologies Symposium (ICITS 2021) on October 26-28, 2021.

² Assist. Prof.Dr, Kırşehir Ahi Evran University, ramazan.dulkadir@ahievran.edu.tr, 0000-0002-6640-9277

³ Assist. Prof.Dr, Muş Alparslan University, nd.yaman@alparslan.edu.tr, 0000-0002-5339-7449

⁴ Assist. Prof.Dr, Muş Alparslan University, f.yaman@alparslan.edu.tr, 0000-0002-7425-1369 (Corresponding author)

⁵ The research proposal was approved by the Social and Human Sciences Scientific Research and Publication Ethics Committee of Kırşehir Ahi Evran University.

ÖZ: Dünyayı sarsan COVID-19 pandemisi sürecinde insanlar evlerine kapanmış ve gündelik işlerini uzaktan yapmaya başlamıştır. Evlere kapanmadan dolayı teknoloji kullanım oranları artmış ve insanlar dijital ortamda yaşamaya başlamıştır. Bu durum yetişkinlerde sorun oluşturabildiği gibi küçük yaş grubundaki bireylerde de sorunlar ortaya çıkarmaya başlamıştır. Pandemi sürecinde çocuklarda sosyal aktivitelerde azalma, teknolojik araç kullanma isteğinde artma, ailesine ve çevresine karşı agresifleşme, arkadaşları ile oynama isteğinde azalma ve daha sessiz ve içe kapanık olma gibi sosyal ve psikolojik sonuçlara da ulaşılmıştır. Bu bağlamda bu çalışmanın amacı pandemi sürecinde çocukların teknolojiyi kullanma sürelerinin, nedenlerinin ve aşırı kullanmaları sonucunda ortaya çıkan durumların belirlenmesidir. Çalışma, tarama modeline dayalı olarak desenlenmiştir. Bu amaçla çalışmada araştırmacılar tarafından geliştirilen bir ölçme aracı kullanılmış ve 132 ebeveynden veri toplanmıştır. Katılımcıların eğitim düzeyleri genel olarak (%62) lisans derecesindedir. Çalışmada verilerin analizinde betimsel istatistiklerden ($\%$, f , \bar{x} , ss), Mann Whitney U testinden ve Kruskal Wallis H testinden yararlanılmıştır. Yapılan analizler sonucunda çalışmanın en önemli bulgusu pandemi sürecinde çocukların teknolojik araçlarla çok uzun zaman geçirdiği ve bu durumun gerek uyku düzenlerine gerek fiziksel yapılarına olumsuz yönde etki ettiği bulgusudur. Cinsiyet, eğitim düzeyi ve İnternet kullanım deneyimleri gibi değişkenler açısından ebeveynlerin durumları incelendiğinde anlamlı bir fark oluşmadığı belirlenmiştir. Ancak çocuk sayısı değişkeninde anlamlı bir değişiklik olduğu belirlenmiştir. Çocuklarda aşırı teknoloji kullanımından kaynaklı sorunların meydana geldiği belirlenmiştir. Bu durumda ailelere birtakım sorumluluklar düşmektedir. Aileler, çocuklarını teknolojinin etkilerinden korumak için birincil derecede sorumludurlar. Bu sorumluluklarını yerine getirmeleri ve bilinçli ebeveyn olmaları için ailelere yönelik eğitimler geliştirilebilir. Aileler çocuklarını fiziksel oyunlara yönlendirebilir ve çocuklarıyla daha fazla zaman geçirebilirler.

Anahtar sözcükler: Çocukların teknoloji kullanımı, pandemide çocuklar, aşırı teknoloji kullanımı

1. INTRODUCTION

A pandemic is a disease that has become global and which spreads rapidly among people with dangerous consequences (Morens, Folkers and Fauci, 2009). The Covid 19 pandemic, which began in Wuhan, China at the end of 2019, spread throughout the world and became a pandemic in 2020 (WHO, 2020), causing substantial health, economic, and social issues (WHO, 2019). Measures were taken in numerous areas of life as part of the effort to thwart the pandemic. One of these measures was house confinement for social isolation. Individuals restricted to their houses increased their use of technology (Garfin, 2020). It is believed that during the pandemic, people participated in addictive activities such as watching TV programs and videos, using social media, surfing the Internet, or playing video games more than they did before the pandemic in order to ease their worries with regard to altering living conditions (Gao et al., 2020; Király et al., 2020; Majeed et al., 2020). According to Statista (2020) data, 67% of individuals watch more news broadcasts than they did previously, 45% spend more time on instant messaging services, 44% spend more time on social media, and 36% play video games for longer periods of time. In addition, Verizon observed a 75% rise in online gaming activity and digital gaming-related Internet traffic (Shanley, 2020). It can be stated that the reasons for the increased use of technology is keeping people at home, alleviating worry during the pandemic, and the precautions taken in education.

As a result of decisions made at both national and international levels in education, the transition from face-to-face education to distance education began. E-commerce, e-banking, e-communication, and e-government are all commonplace applications. However, because technological devices pose hazards, considering them just in terms of the potential they provide is insufficient (Valcke, De Wever, Van Keer and Schellens, 2011). When we consider the risks associated with technical devices, we come across themes like dangerous content, cyberbullying, cyber fraud, and cyber harassment (Hasebrink, Livingstone, Haddon and Olafsson, 2009; Van den Heuvel, Van den Eijnden, Van Rooij and Van de Mheen, 2012; Ybarra, 2004). While trying to protect children from such a negative environment, children have begun to overuse these settings through the remote education method. The fact that this new generation of children, called digital natives since they were born into technology, are entangled with technology does not imply that they just use these means to access correct information (Çebi and Bahçekapılı Özdemir, 2019).

1.1. Pandemic Period

1.1.1. *Technology Use During the Pandemic*

The COVID-19 pandemic period was a significant period that has greatly affected people's lives and habits. During this process, the use of technology has played a vital role for individuals. Both at individual and societal level, technology has helped overcome many challenges. Alongside the benefits of technology during this process, problems arising from its excessive use have also emerged.

Throughout the pandemic, technology has assisted individuals in fulfilling their needs in various areas such as health, education, work, and social life. For example, in the health sector, technological solutions like telemedicine, artificial intelligence, robotic systems, vaccine development, and distribution processes saved lives. In education, with the closure of schools, remote learning models rapidly became widespread. Students were able to continue their lessons through online education platforms, and teachers continued education by interacting with students in virtual classroom environments (Özkanal, 2022). This period highlighted the importance of digitization in education. In the field of work, technological opportunities such as remote work models, video conferencing systems, and cloud

computing services increased work efficiency. In the domain of social life, technological activities such as social media platforms, online games, and streaming services enabled people to maintain their communication and entertainment.

In addition to their advantages, a number of problems related to technology use emerged during the pandemic period. Lockdowns and social isolation recommendations particularly increased digital entertainment consumption, such as online gaming. Studies have reported an approximate 70% increase in online gaming activity and Internet traffic related to gaming (Daniele and Niclas, 2020; Shanley, 2020). In the face of changing living conditions during the pandemic, people turned more towards behavior with addiction risks, such as binge-watching series and videos, using social media, browsing the Internet, or playing video games to alleviate their anxiety (Gao et al., 2020; Király et al., 2020; Majeed et al., 2020). The prevalence of severe Internet addiction increased by 23%, from 3.5% to 4.3%, compared to the period before the COVID-19 pandemic (Sun et al., 2020). In education, challenges were experienced such as the quality of remote education (Karakuş et al., 2020), student motivation and engagement (Bakioğlu and Çevik, 2020; Koç, 2021), measurement errors (Bozkurt, 2020; d'Orville, 2020), teacher competence and support (Bakırcı, Doğdu and Artun 2021), and infrastructure issues (Sahu, 2020). In the field of work, issues like the psychological and physical effects of remote work, job security and rights, and work-life balance were encountered. The use of technology during the COVID-19 pandemic has seen both benefits and drawbacks. Technology has greatly contributed to making people's lives easier and continued during the pandemic process.

1.1.2. Children During the Pandemic

During the pandemic period, providing educational activities through distance education, increasing time spent at home due to children's inability to leave their homes, being away from their school and their circle of friends, and other similar situations have caused children to lead sedentary lives and spend a lot of time with technological devices (Aktaş and Bosdancı Daştan, 2021; Gökler and Turan, 2020; Gümüşgül and Aydoğan, 2020; Uslu, Karavelioğlu and Gümüşgül, 2020). During the pandemic period, the generation referred to as Generation Z is ahead in terms of media usage compared to other generations (Statista, 2020). Children are increasingly exposed to screens since they spend more time using technological devices. According to research conducted in Wuhan, the pandemic's epicenter, both children, and adolescents face the problem of inactivity (Xiang, Zhang and Kuwahara, 2020) and problematic Internet use (Király et al., 2020) to cope with and to escape the current circumstances, as a result of locking up their houses as part of the social isolation measures. Children are often considered partially adequate in verifying the accuracy of the information they access online (Korucu, Çoklar, Gündoğdu and Gençtürk, 2019). However uncontrolled gaming among vulnerable individuals, such as children in the gaming age group, is seen as a harmful habit (King, Delfabbro, Billieux and Potenza, 2020). Children's use of electronic devices has physical, social, emotional, and cognitive consequences.

A number of variables should be employed to reveal the technology using status of children. When the role or gender of the parents is considered, it can be seen that those in the mother role exhibit a more meticulous attitude in examining their children's online activities (Anderson, Singh and Page, 2016). Another variable included in the research is the educational status of parents. According to research, there is no mention of any effect between parents' educational level and their children's technology use (Oğuz and Kutluca, 2020) but there is also a positive relationship (Cengiz Saltuk and Erciyes, 2020). In other words, as parents' educational level increases, children's technology use also increases. While it can be seen that children's technology use increases as the number of children in the family increases

(TÜİK, 2021), it is also seen that it decreases (BTK, 2019). Another variable is that parents' digital literacy levels should be taken into account. Parents with low Internet literacy create differences in terms of the frequency of Internet monitoring, directing and encouraging children's Internet use compared to parents with high Internet literacy (Lou et al., 2010). The aim of this study is to investigate children's technology use and the outcomes of this technology use during the pandemic period. Answers to the following questions will be sought in accordance with this general aim:

1. How has the pandemic changed children's use of technology?
2. Does the technology use of children in the pandemic differ based on the parents'
 - gender,
 - educational background,
 - the number of children they have,
 - or their Internet use experience?
3. What are the outcomes of children's use of technology during the pandemic?
4. What strategies are families employing in response to children's requests for technology use during the pandemic?

2. METHOD

The study model, the universe and sample of the study, the data collecting technology, and the statistical techniques utilized in data gathering and analysis are all detailed in this section.

2.1. The Study Model

The survey model was used in the study pattern. Survey models are survey arrangements conducted on an entire universe or a group, sample, or sample taken from the universe in order to reach a general judgment about the universe in a universe with many elements (Creswell, 2014).

2.2. Participants

While determining the sample, the convenience sampling method was preferred. According to Malhotra (2004), in the convenience sampling method, data can be easily, quickly and economically collected from a population. The participants of the study are the parents who brought their children to hospital in January 2021. The study included 132 participants, 77 of whom were women and 55 of whom were men. The participants ranged in age from 24 to 52 years ($\bar{x}=39.01$, $sd=4.78$). 62 percent of the participants had a bachelor's degree, 17 percent had an associate degree, and 16 percent had a high school diploma. The remainder (5%) are in had primary, secondary, or graduate school degrees. The number of children the participants had ranged from one to five, with 68% of parents having two children, 16% having three children, and 13% having one child. The remaining 3% were families with four or five children. The age range of the children of parents participating in the study was between 5-18 years old; there were eighteen children each at the ages of 6, 10, 17 and 18 with one child at the age of 7 (29) most. The youngest children were those who were at least 5 years old. Of the participating parents, 71% had been using the Internet for over nine years.

The study's participants used several social media platforms. WhatsApp was used by 94% (127) of the participants, Instagram by 81% (109), Facebook by 79.1% (106), and YouTube by 67.2% (90). It was discovered that 92.5% of the participants' technological devices were smartphones, 76.9% were televisions, 74.6% were laptops, 72.4% were tablets, and 41.8% were smart televisions. When the participants' educational device use was investigated, it was discovered that 78.4% (105) preferred smartphones, 74.6% (100) preferred laptops, 57.5% (77) preferred tablets, 24.6% (33) preferred televisions, and the remaining 24.6% (33) preferred desktop computers.

2.3. Data Collection Tool, Process and Analysis

The researchers used a questionnaire entitled "Technology Usage of Children During the Pandemic" to collect data for the study (Appendix 1). Field experts provided suggestions for the designed questionnaire. In the original version of the Questionnaire, there were eighteen questions. With the opinions of the experts, the questionnaire turned into its final form with twenty-four questions. In the feedback from the experts, there was a lack of questions regarding the need to determine whether children are affected by the technologies used and parents' help against problems. The survey, which was organized based on the responses, is divided into three sections. The first section begins with a question that determines the participants' willingness to participate in the study. Once participation in the study has been accepted, the participants can move on to the next section. The second section includes ten questions designed to ascertain the demographic characteristics of the participants. In the last section, fifteen questions regarding distance education during the pandemic were asked. This section contains questions regarding the distance education procedure that pupils went through before and after the pandemic. The data collection tool was uploaded to Google Forms, and data were collected from families using this form in the fall term of 2020-2021.

2.4. Data Analysis

The Kolmogorov Smirnov test was used to examine the normality assumptions of the tests utilized, and the study group included more than fifty participants (Büyüköztürk, Çokluk Bökeoğlu and Köklü, 2015). As a consequence of the test, it was established that the variables' skewness and kurtosis values were not within +1.5 and -1.5 (Tabachnick, Fidell and Ullman, 2013). It is presumed that the data are not normally distributed based on the findings of the Kolmogorov Smirnov Test and the skewness and kurtosis distributions. In this case, descriptive statistics ($\%$, f , \bar{x} and sd), the Mann-Whitney U test and the Kruskal-Wallis H test were employed to analyze the data. These tests are preferred when the data does not show a normal distribution.

3. FINDINGS

In this section, the findings will be presented in line with the study questions.

3.1. Changes in the Use of Technology by Children During the Pandemic

Before and after the pandemic, smartphones were among the most popular technological devices among children. Laptops, tablets, and televisions came next. Although the order of the most often used devices remained constant, the durations of use and the purposes of the technological devices altered (Table 1).

Table 1. *The Children's Use of Technological Devices Before and After the Pandemic*

	The use of technological devices				The use of technological devices during the pandemic			
	Before the pandemic		During the pandemic		For distance education activities		For purposes other than distance education activities	
	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>
0-1 hour	41	55	2.2	3	6	8	44	59
2-3 hours	38.8	52	11.2	15	21.6	29	37.3	50
4-5 hours	14.2	19	36.6	49	39.6	53	9.7	13
6 hours and over	6	8	50	67	32.8	44	9	12

Table 1 shows the difference in the use of technological devices by children before and after the pandemic. It is also clear that the difference is due to the distance education system that operated throughout the pandemic. During the pandemic, children used technological devices for instructional purposes over an extended period.

3.2. Children's Use of Technology Differing Based on Their Parents

3.2.1. Gender

The Mann-Whitney U test was used to assess whether the gender of the parents affected their children's use of technology during the pandemic (Table 2).

Table 1. *The Impact of Parents' Gender on Children's Use of Technology During the Pandemic*

Sex	n	Mean Rank	Sum of Ranks	U	p
Female	77	63.82	4914.5		
Male	55	70.25	3863.5	1911.5	.308
Total	132				

$p < .05$

Table 2 reveals that the gender of the parents had no effect on children's use of technology during the pandemic and that there was no significant difference ($U=1911.5$, $p < .05$).

3.2.2. Educational Level, Number of Children and Experience of Internet Use

The Kruskal-Wallis H test was used to determine whether the parents' educational level, the number of children in the family, and their experience in Internet use influenced their children's use of technology during the pandemic (Table 3).

Table 2. *The Impact of Parents' Educational Level, the Number of Children They Had, and Their Experience of Internet Usage on Their Children's Use of Technology During the Pandemic*

Educational Level	n	\bar{x}	df	χ^2	p
Primary and Secondary Education	25	57.10			
Associate	23	75.39	2	3.355	.187
Undergraduate and Postgraduate Education	84	66.86			
Total	132				
The number of children in the family	n	\bar{x}	df	χ^2	p
1 child	18	44.61			
2 children	90	69.11	2	8.554	.014
3 children and more	24	73.15			
Total	132				
Internet use experience	n	\bar{x}	df	χ^2	p
1-5 years	20	54.10			
6-8 years	18	60.56	2	4.197	.123
9 years and over	94	70.28			
Total	132				

$p < .05$

When the effect of parents' educational level [$\chi^2_{(2)}=3,355$, $p < .05$], and their Internet use experience [$\chi^2_{(2)}=4,197$, $p < .05$] on children's use of technology during the pandemic was investigated, see Table 3, no statistically significant difference was found. With regard to the number of children they had [$\chi^2_{(2)}=8,554$, $p < .05$] a statistically significant difference was found. The number of children parents had seems to have been effective on their children's use of technology.

3.3. The Outcomes of Children's Use of Technology During the Pandemic

Long-term use of technological devices as well as the effect of staying at home during the pandemic can have an impact on children's sociological features. In this period, families noted a decrease in their children's social activities (67.9%), an increase in their desire to use technological tools (67.9%), aggressiveness towards their families and their environment (38.8%), a decrease in their desire to play with their peers (29.9%), as well as the children becoming more reserved and more introverted (15.7%), with 9.7% of the children showing no change. Long-term usage of technological devices has a physical impact on children. Weight growth was found in 56% of the children during this period, with 54.3% of the families blaming it on the use of technological devices. Similarly, sleep disturbances were reported in children (65.7%), with 55.2% claiming that this was linked to the use of technological devices.

3.4. The Methods Employed by the Families During the Pandemic

During the pandemic, it was discovered that families utilized/did not let their children use technological devices in diverse ways. A quarter of the families (23.88%) did not establish any rules. While the families' primary goal was to avoid using technological devices outside of the classroom, they declared that if they must be used, they must be used for purposes that were within the scope of the courses followed. A time limit was enforced as a result of this. There were a number of families who limited the time spent on technological devices on weekdays and weekends. This was because while classes were held during the week, there were no classes at weekends. When children wished to use technological devices outside of classes, they were given a time limit.

4. DISCUSSION and CONCLUSION

This study, which was conducted to investigate the status of children's use of technology and the results of technology use during the pandemic, concluded that children's use of technological devices differed substantially before and during the pandemic. While the rate of using technological devices for 0-1 hour and 2-3 hours per day was 79.8% before the pandemic, the rate of using technological tools for 4-5 hours and 6 hours or more during the pandemic was 72.4%. In other words, while the rate of those who used technology for 4-5 hours, 6 hours or more before the pandemic was 20.2%, this rate was 72.4% during the pandemic. Usage of 6 hours or more is high. In this situation, staying at home and receiving distance education was successful. Excessive use of technological devices occurs not just in children receiving remote education, but also in people of all ages (Drouin, McDaniel, Pater and Toscos, 2020; Wilde, 2020). Excessive use of technological devices can also result in physical health problems such as musculoskeletal disorders or obesity as a result of prolonged use in particular bodily positions (Binboğa Yel and Korhan, 2015; Gökel, 2020; Rundle et al., 2020). The prevalence of severe Internet addiction has increased by 23%, rising from 3.5% to 4.3%, compared to the period before the COVID-19 pandemic (Sun et al., 2020).

When the factors influencing children's technology use during the pandemic period were investigated, it was discovered that parental gender, educational level, and Internet use experience apart from the number of children, had no effect. However, there are studies that show substantial variations between children's TV viewing time, computer use time, technological device use time, parental gender (Arı Arat and Gülay Ogelman, 2021), maternal educational level (Arı Arat and Gülay Ogelman, 2021; Özcan, 2018), and family size (Arı Arat and Gülay Ogelman, 2021). It is also reported that low-education households are media-centered, with these families watching television for an average of eleven hours each day (Coyne et al., 2017). This also has an impact on children's use of technology. In addition to educational level, expertise in internet use is vital for managing and controlling children's use of technology. It is claimed that among internet parenting styles, parents with more Internet expertise choose authoritarian parenting (Wong, Ho and Chen, 2015). However, parents showing high Internet use experience trust their children and do not tend to direct or encourage their children's Internet use severely (Lou et al., 2010), which also supports children's excessive use of technology during the pandemic. During the pandemic, this situation encourages children to use technology extensively.

Children's social activities decreased, their desire to use technological tools increased, they became aggressive towards their families and surroundings, their desire to play with their friends decreased, and it was determined that children were more reserved and introverted during the pandemic. Of the families, 54.3 percent said their children's excessive use of technological devices was to blame

for these results. Similarly, Medrano et al. (2021) also state that during the COVID-19 period, there was a decrease in the time allocated for physical activity and an increase in screen time among children. In addition to this study's findings, excessive use of technological devices leads to problems such as inactivity, obesity, deterioration of social relationships, and a failure to allocate time to daily activities (Muslu and Bolşık, 2009). During the pandemic period, characterized by social isolation and stay-at-home recommendations, the development of unhealthy gaming patterns to alleviate stress, disruption of sleep patterns, and an increase in sedentary behavior can turn into an unnoticed vicious cycle when combined with excessive gaming (Saunders et al., 2020).

Families utilized various measures against their children to keep them from excessive use of electronic gadgets during the pandemic. In the face of changing living conditions during the pandemic, people turned more towards behavior with addiction risk, such as binge-watching series and videos, using social media, browsing the Internet, or playing video games, to alleviate their anxiety (Majeed et al., 2020; Gao et al., 2020; Király et al., 2020). Families tried not to use technological tools other than for the purpose of school lessons, and if they had to be used, a time restriction was imposed to ensure that their use was for the correct purpose. When determining the time restriction, the distinction between weekdays and weekends was also considered. A quarter of the families had no rules.

From this perspective, the following recommendations might be given for families who use technological devices excessively both during the pandemic and during regular times:

- Using technology, parents could organize health and exercise activities for their children. In this approach, you will not be inactive when using technology.
- Children who use technology excessively use it to play games. As a result, by playing games other than digital games, parents can keep their children away from technology and avoid their children's inactivity.
- Screen time for children should be limited by parents. In this respect, they could consider the recommendations of the American Academy of Pediatrics [AAP] (2019). Except for video calls, the AAP does not advocate screen use for children under the age of eighteen months. It is recommended that children aged 18-24 months watch only instructional content while supervised by an adult and that children aged 2-5 restrict screen time to one hour on weekdays and three hours at weekends. Screen time for children above the age of six should be minimized, and healthy practices should be emphasized, according to the AAP.
- Researchers could collaborate with both parents and children to address the children's excessive use of technology. Training for parents and children could be conducted as part of these activities.

Contribution Rate Statement of Researchers

The authors contributed equally to the research.

Ethical Approval

The research proposal was approved by the Social and Human Sciences Scientific Research and Publication Ethics Committee of Kırşehir Ahi Evran University (Date: 18.05.2021, Number: 2021-09/101).

Credit Authorship Contribution Statement

First Author: Conceptualization, Writing – original draft.

Second Author: Conceptualization, Methodology, Formal Analysis, Writing – original draft.

Third Author: Conceptualization, Methodology, Formal Analysis, Writing – original draft.

Declaration of Competing Interest

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

This work was not supported by any institution

Acknowledgements

We thank the hundreds of participants who contributed to the current research through their invaluable responses.

APPENDIX

Appendix 1

Değerli ebeveyn,

Bu araştırmada, ebeveynlerin, özellikle uzaktan eğitim sürecinde çocuklarının teknolojik araçları kullanma durumlarının incelenmesi amaçlanmıştır. Formun yanıtlanması 5-10 dakika sürmektedir. Toplanan veriler araştırma ekibi tarafından gizli tutulacak, araştırmanın amacı dışında hiçbir şekilde kullanılmayacaktır. Sizden her soruyu dikkatle okuyarak, durumunuza en uygun olan maddeleri işaretlemeniz ve tüm bölümleri eksiksiz olarak doldurmanız istenmektedir. Gösterdiğiniz duyarlılık ve katılımınız için çok teşekkür ederiz.

Dr. Ramazan Dulkadir
Dr. Fatih Yaman
Dr. Nihal Dulkadir Yaman

1. Cinsiyetiniz

Kadın Erkek

2. Yaşınız:

3. Öğrenim Durumunuz

İlkokul Ortaokul Lise Ön Lisans
Lisans Yüksek Lisans Doktora Diplomam Yok

4. Kaç çocuğunuz var?

1 Çocuk 2 Çocuk 3 Çocuk 4 Çocuk 5 çocuk ve üzeri

5. Çocuğunuz/Çocuklarınızın yaş(lar)ını yazar mısınız?

.....

6. Kaç yıldır internet kullanıyorsunuz?

0-2 yıl 3-5 yıl 6-8 yıl 9 yıl ve üzeri

7. Hangi sosyal medya ortamlarını kullanıyorsunuz? (Birden fazla seçenek işaretleyebilirsiniz.)

Facebook Instagram Twitter Snapchat
TikTok YouTube WhatsApp Hiçbiri

8. Evinizde bulunan teknolojik araçlar nelerdir? (Birden fazla seçenek işaretleyebilirsiniz.)

Televizyon Akıllı televizyon Tablet Akıllı Telefon
Dizüstü bilgisayar Masaüstü bilgisayar Oyun konsolu
Diğer:

9. Eğitim amaçlı kullandığınız cihazlar hangileridir? (Birden fazla seçenek işaretleyebilirsiniz.)

Televizyon Akıllı televizyon Tablet Akıllı Telefon
Dizüstü bilgisayar Masaüstü bilgisayar Oyun konsolu
Diğer:

10. Aylık Gelir Durumunuz

500-1499 TL 1500-2499 TL 2500-3499 TL 3500-4499 TL
4500-5499 TL 5500-6499 TL 6500 TL ve üzeri Belirtmek istemiyorum

Birden fazla çocuğunuz var ise sıradaki soruları aktif olarak uzaktan eğitime katılan çocuğunuzu göz önünde bulundurarak yanıtlayınız.

11. Çocuğunuzun evde kullandığı teknolojik araçlar nelerdir? (Birden fazla seçenek işaretleyebilirsiniz.)

Televizyon Akıllı televizyon Tablet Akıllı Telefon
 Dizüstü bilgisayar Masaüstü bilgisayar Oyun konsolu
 Diğer:

12. Uzaktan eğitim sürecinden önce çocuğunuz günlük olarak kaç saat teknolojik araç kullanmaktaydı?

0-1 saat 2-3 saat 4-5 saat 6 saat ve üzeri

13. Uzaktan eğitim sürecinde çocuğunuz günlük olarak kaç saat teknolojik araç kullanmaktadır?

0-1 saat 2-3 saat 4-5 saat 6 saat ve üzeri

14. Uzaktan eğitim için çocuğunuzun evde kullandığı teknolojik araçlar nelerdir? (Birden fazla seçenek işaretleyebilirsiniz.)

Televizyon Akıllı televizyon Tablet Akıllı Telefon
 Dizüstü bilgisayar Masaüstü bilgisayar Oyun konsolu
 Diğer:

15. Uzaktan eğitim sürecinde çocuğunuz teknolojik araçları eğitim amaçlı olarak günlük olarak kaç saat kullanmaktadır?

0-1 saat 2-3 saat 4-5 saat 6 saat ve üzeri

16. Uzaktan eğitim sürecinde çocuğunuz teknolojik araçları eğitim amacı dışında günlük olarak kaç saat kullanmaktadır?

0-1 saat 2-3 saat 4-5 saat 6 saat ve üzeri

17. Uzaktan eğitim sürecini düşündüğünüzde çocuğunuzun teknolojik araç kullanımında ne gibi değişiklik(ler) meydana gelmiştir? (Birden fazla seçenek işaretleyebilirsiniz.)

Hiçbir değişiklik olmadı. Sosyal aktiviteleri azaldı.
 Teknolojik araç kullanma isteği arttı. Arkadaşları ile oynama isteği azaldı.
 Bize ve çevresine karşı agresifleşti. Daha sessiz ve içe kapanık oldu.

18. Uzaktan eğitim sürecinde çocuğunuzun teknolojik araç kullanım isteğine karşı belirlediğiniz kurallar var mı? Varsa nelerdir?

.....

19. Çocuğunuzun teknoloji bağımlılığı (internet bağımlılığı, oyun bağımlılığı, ekran bağımlılığı) gibi sorunları var mı?

Evet Hayır

20. Bir önceki soruya evet cevabını verdiyseniz; bu konuda uzmanlardan yardım almayı düşündünüz mü?

Evet Hayır

21. 19. soruya evet cevabını verdiyseniz; bu konuda uzmanlardan yardım aldınız mı?

Evet Hayır

22. Çocuğunuz pandemi sürecinde kilo aldı mı?

Evet Hayır

23. Bir önceki soruya evet cevabını verdiyseniz; sizce çocuğunuzun kilo alımının teknoloji araçlarını kullanım süresi ile ilgisi var mı?

Evet Hayır

24. Çocuğunuzun pandemi sürecinde uyku düzeni bozuldu mu?

Evet Hayır

25. Bir önceki soruya evet cevabını verdiyseniz; sizce çocuğunuzun uyku düzeni bozulmasının teknoloji araçlarını kullanım süresi ile ilgisi var mı?

Evet Hayır

REFERENCES

- Aktaş B & Bostancı Daştan N. (2021) Covid-19 pandemisinde üniversite öğrencilerindeki oyun bağımlılığı düzeyleri ve pandeminin dijital oyun oynama durumlarına etkisi. *Bağımlılık Dergisi* 22(2), 129–138.
- American Academy of Pediatrics [APA], (2019). *Screen Time and Children*. Retrieved June 13, 2022 from https://www.aacap.org/AACAP/Families_and_Youth/Facts_for_Families/FFF-Guide/Children-And-Watching-TV-054.aspx.
- Anderson, M., Singh, A. & Page, D. (2016). Parents, teens and digital monitoring. *Pew Internet & American Life Project*. Retrieved January, 20, 2016.
- Arı Arat, C. & Gülay Ogelman, H. (2021). Examining of technological tool useage of young children in the COVID-19 process in terms of several variables. *Maarif Mektepleri International Journal of Educational Sciences*, 5(1), 15-32. <https://doi.org/10.46762/mamulebd.880109>
- Bakırcı, H., Dođdu, N. & Artun, H. (2021). Covid-19 pandemi dönemindeki uzaktan eğitim sürecinde fen bilgisi öğretmenlerinin mesleki kazanımlarının ve sorunlarının incelenmesi. *Ahi Evran Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 7(2), 640-658.
- Bakiođlu, B. & Çevik, M. (2020). COVID-19 Pandemisi sürecinde fen bilimleri öğretmenlerinin uzaktan eğitime ilişkin görüşleri. *Electronic Turkish Studies*, 15(4), 109-129.
- Binbođa Yel, E. & Korhan, O. (2015). Eğitsel Amaçlı Masaüstü/Dizüstü/Tablet Bilgisayar Kullanımında Öğrencilerin Kas-İskelet Hareketleri ve Olası Kas İskelet Rahatsızlıkları. *Süleyman Demirel Üniversitesi Mühendislik Bilimleri ve Tasarım Dergisi*, 3(3), 631-638.
- Bozkurt, A. (2020). Koronavirüs (Covid-19) pandemi süreci ve pandemi sonrası dünyada eğitime yönelik değerlendirmeler: Yeni normal ve yeni eğitim paradigması. *Açıköğretim Uygulamaları ve Araştırmaları Dergisi (AUAd)*, 6(3), 112-142. <https://hdl.handle.net/11421/25005>
- BTK (2019). İnternet Kullanımında Çocuk ve Aile İlişkisi. Retrieved August 31, 2023 from <https://internet.btk.gov.tr/internet-kullaniminda-cocuk-ve-aile-iliskisi>
- Büyükköztürk, Ş., Çokluk Bökeođlu, Ö. & Köklü, N. (2015). Sosyal bilimler için istatistik. Ankara: Pegem Akademi Yayıncılık.
- Cengiz Saltuk, M. C., & Erciyes, C. (2020). Okul öncesi çocuklarda teknoloji kullanımına ilişkin ebeveyn tutumlarına dair bir çalışma. *Yeni Medya Elektronik Dergisi*, 4(2), 106-120.
- Coyne, S. M., Radesky, J., Collier, K. M., Gentile, D. A., Linder, J. R., Nathanson, A. I., ... & Rogers, J. (2017). Parenting and digital media. *Pediatrics*, 140(2), S112-S116.
- Creswell, J.W. (2014). *Qualitative inquiry and research design: Choosing among five approaches*. USA: Sage Publications.
- Çebi, A. & Bahçekapılı Özdemir, T. (2019). The role of digital nativity and digital citizenship in predicting high school students' online information searching strategies. *Education and Science*, 44(200), 47-57. <http://dx.doi.org/10.15390/EB.2019.8379>
- Daniele, L. & Niclas, R. (2020) Fortnite Gamers Stuck at Home Strain Italy's Network. Retrieved August 12, 2023 from <https://www.bloomberg.com/news/articles/2020-03-12/housebound-italian-kids-strain-network-with-fortnite-marathon>
- d'Orville, H. (2020). COVID-19 causes unprecedented educational disruption: Is there a road towards a new normal? *Prospects*, 49, 11-15.
- Drouin, M., McDaniel, B.T. Pater, J. & Toscos, T. (2020). How parents and their children used social media and technology at the beginning of the COVID-19 pandemic and associations with anxiety, *Cyberpsychology, Behavior, and Social Networking*, 23(11), 727-736.
- Gao, J., Zheng, P., Jia, Y., Chen, H., Mao, Y., Chen, S., . . . & Dai, J. (2020). Mental health problems and social media exposure during COVID-19 outbreak. *PLoS One*, 15(4). 1-10. doi:10.1371/journal.pone.0231924
- Garfin, D. R. (2020). Technology as a coping tool during the COVID-19 pandemic: Implications and recommendations. *Stress and Health*. 36, 555-559.
- Gökel, Ö. (2020). Teknoloji bağımlılığının çeşitli yaş gruplarındaki çocuklara etkileri hakkındaki ebeveyn görüşleri. *Cyprus Turkish Journal of Psychiatry & Psychology*, 2(1), 41-47.

- Gökler M.E. & Turan, Ş. (2020). Covid-19 pandemisi sürecinde problemlı teknoloji kullanımı. *Estüdam Halk Sağlığı Dergisi* 5(2), 108–114.
- Gümüşgöl, O. & Aydoğan, R. (2020). Yeni tip Koronavirüs-Covid 19 kaynaklı evde geçirilen boş zamanların ev içi rekreatif oyunlar ile değerlendirilmesi. *Spor Eğitim Dergisi*. 4(1),107-114.
- Hasebrink, U., Livingstone, S., Haddon, L. & Ólafsson, K. (2009). *Comparing children's online opportunities and risks across Europe: Cross-national comparisons for EU Kids Online*, 2nd Ed., Deliverable D3.2, LSE, London, EU Kids Online, Retrieved December 20, 2014 from http://eprints.lse.ac.uk/24368/1/D3.2_Report-Cross_national_comparisons-2nd-edition.pdf.
- Karakuş, N., Ucuzsatar, N., Karacaoğlu, M. Ö., Esendemir, N. & Bayraktar, D. (2020). Türkçe öğretmeni adaylarının uzaktan eğitime yönelik görüşleri. *Rumelide Dil ve Edebiyat Araştırmaları Dergisi*, 19, 220-241.
- King, D. L., Delfabbro, P. H., Billieux, J., & Potenza, M. N. (2020). Problematic online gaming and the COVID-19 pandemic. *Journal of behavioral addictions*, 9(2), 184-186.
- Király, O., Potenza, M. N., Stein, D. J., King, D. L., Hodgins, D. C., Saunders, J. B., . . . & Demetrovics, Z. (2020). "Preventing problematic internet use during the COVID-19 pandemic: Consensus guidance". *Comprehensive Psychiatry*, 100, Advance online publication.
- Koç, E. S. (2021). Nasıl bir uzaktan eğitim? 1 yılın sonunda yapılan çalışmaların değerlendirilmesi. *International Anatolia Academic Online Journal Social Sciences Journal*, 7(2), 13-26.
- Korucu, A.T., Çoklar A. N., Gündoğdu M. M. & Gençtürk A.T. (2018). Ortaokul öğrencilerinin internette buldukları bilgilere yönelik farkındalıklarının belirlenmesi. *Anadolu Üniversitesi Eğitim Fakültesi Dergisi (AUJEF)*, 3(2), 79-95.
- Lou, S. J., Shih, R. C., Liu, H. T., Guo, Y. C. & Tseng, K. H. (2010). The influences of the sixth grad'rs' pare'ts' Internet literacy and parenting style on Internet parenting. *Turkish Online Journal of Educational Technology-TOJET*, 9(4), 173-184.
- Majeed, M., Irshad, M., Fatima, T., Khan, J. & Hassan, M. M. (2020). "Relationship Between Problematic Social Media Usage and Employee Depression: A Moderated Mediation Model of Mindfulness and Fear of COVID-19". *Front. Psychol.*, 11(557987). doi:10.3389/fpsyg.2020.557987
- Malhotra, N. K. (2004). *Marketing Research an Applied Orientation*, 4. Edition, Pearson Prentice Hall, New Jersey.
- Medrano, M., Cadenas-Sanchez, C., Oses, M., Arenaza, L., Amasene, M. & Labayen, I. (2021). Changes in lifestyle behaviours during the COVID-19 confinement in Spanish children: A longitudinal analysis from the MUGI project. *Pediatric Obesity*, 16(4), 1-11.
- Morens, D. M., Folkers, G. K. & Fauci, A. S. (2009). What is a pandemic?. *The Journal of infectious diseases*, 200(7), 1018-1021.
- Muslu, G. K. & Bolışık, B. (2009). Çocuk ve gençlerde İnternet kullanımı. *TAF Preventive Medicine Bulletin*, 8(5), 445-450.
- Oğuz, B. N. & Kutluca, A. Y. (2020). Okul öncesi dönemde çocukları olan ebeveynlerin teknoloji kullanımına yönelik görüşlerinin incelenmesi. *Ondokuz Mayıs University Journal of Education Faculty*, 39(2), 252-268.
- Özcan, F. (2018). *Okul öncesi eğitimi alan çocuklarda teknoloji kullanımının ve sosyal becerilerin bazı değişkenler açısından incelenmesi*. Yüksek lisans tezi. Kastamonu: Kastamonu Üniversitesi. https://acikbilim.yok.gov.tr/bitstream/handle/20.500.12812/101091/yokAcikBilim_10200667.pdf?sequence=1
- Özkanal, Ü. (2022). The Use of Digital Tools Scaffolding Language Teaching During Pandemic Outbreak of COVID 19 at State Schools in Turkey. *Anadolu Üniversitesi Eğitim Fakültesi Dergisi (AUJEF)*, 6(1), 17-30.
- Rundle AG, Park Y, Herbstman JB, Kinsey EW & Wang YC. (2020). COVID-19 related school closings and risk of weight gain among children. *Obesity*. 28(6), 1008-1009.
- Sahu, P. (2020). Closure of universities due to coronavirus disease 2019 (COVID-19): impact on education and mental health of students and academic staff. *Cureus*, 12(4), 1-5.

- Saunders, J. B., Hao, W., Long, J., King, D. L., Mann, K., Fauth-Bühler, M., ... & Poznyak, V. (2017). Gaming disorder: Its delineation as an important condition for diagnosis, management, and prevention. *Journal of behavioral addictions*, 6(3), 271-279.
- Shanley, P. (2020). Gaming usage up 75 percent amid coronavirus outbreak, Verizon reports. Retrieved January 14, 2022 from <https://www.hollywoodreporter.com/news/gaming-usage-up-75-percent-coronavirus-outbreak-verizon-reports-1285140>.
- Statista, (2020). Number of social media users worldwide. Retrieved April 20, 2020 from <https://www.statista.com/statistics/278414/number-of-worldwidesocial-network-users/>
- Sun, Y., Li, Y., Bao, Y., Meng, S., Sun, Y., Schumann, G., ... & Shi, J. (2020). Brief report: increased addictive internet and substance use behavior during the COVID-19 pandemic in China. *The American journal on addictions*, 29(4), 268-270.
- Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2013). *Using multivariate statistics* (Vol. 6, pp. 497-516). Boston, MA: pearson.
- TÜİK (2021). Çocuklarda Bilişim Teknolojileri Kullanım Araştırması, 2021. Retrieved August 31, 2023 from <https://data.tuik.gov.tr/Bulten/Index?p=Cocuklarda-Bilisim-Teknolojileri-Kullanim-Arastirmasi-2021-41132>
- Uslu, S., Karavelioğlu, M.B. & Gümüşgöl, O. (2020). Geleneksel rekreatif oyunlar: yeni koronavirüs (COVID-19) salgını sürecinde boş zaman değerlendirme önerileri. *Spor ve Rekreasyon Araştırmaları Dergisi*, 2(1), 14-25.
- Xiang, M., Zhang, Z. & Kuwahara, K. (2020). "Impact of COVID-19 pandemic on children and adolescents' lifestyle behavior larger than expected". *Prod Cardiovasc Dis*, 63(4), 531-532.
- Wilde, T. (2020). Online gaming surge: Steam breaks concurrent user record amid social distancing mandates Retrieved January 22, 2022 from <https://www.geekwire.com/2020/online-gaming-surge-steam-breaks-concurrent-user-record-amidsocial-distancing-mandates/2020>.
- WHO (2019). Coronavirus disease 2019 (COVID-19) Situation Report – 51 2020. Retrieved April 28, 2020 from https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200311-sitrep-51-covid-19.pdf?sfvrsn=1ba62e57_10.
- WHO (2020). Coronavirus Pandemic 2020. Retrieved April 28, 2020 from <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>.
- Wong, Y. C., Ho, K. M. & Chen, H. (2015). Internet supervision and parenting in the digital age: the case of Shanghai. *The Open Family Studies Journal*, 7(1), 112-123.
- Valcke, M., De Wever, B., Van Keer, H. & Schellens, T. (2011). Long-term study of safe Internet use of young children. *Computers & Education*, 57(1), 1292-1305.
- Van den Heuvel, A., Van den Eijnden, R. J., Van Rooij, A. J. & Van de Mheen, D. (2012). Meeting online contacts in real life among adolescents: The predictive role of psychosocial wellbeing and internet-specific parenting. *Computers in Human Behavior*, 28(2), 465-472.
- Ybarra, M. L. (2004). Linkages between depressive symptomatology and Internet harassment among young regular Internet users. *CyberPsychology & Behavior*, 7(2), 247-257