

ORIGINAL ARTICLE

Family Attitudes Toward the Use of Technological Devices by Children During COVID-19

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Main Points

- The rapidly increasing use of technological devices and the internet today has been accelerated by the effect of the coronavirus disease 2019 pandemic.
- The frequent use of technological devices and spending a long time on the internet negatively affect the psychosocial development of children.
- Parents should be careful and attentive to the technological device usage behaviors of their children, and they should protect them against possible problems during the pandemic.

Abstract

This study aimed to find out the technological device using behaviors of the children and the attitudes of their families regarding this during the coronavirus disease 2019 pandemic. The study was a descriptive research composed of the mothers of 0- to 18-year-old children who were contacted through social media. Descriptive statistics of data were carried out with frequency and percentage distribution based on the demographic characteristics of the mothers. The mean age of the parents included in the study was found to be 35 ± 7 years; 89.1% were females and 31% were secondary school graduates. It was found that a technological device was used by 78.1% of the children before the coronavirus disease 2019 pandemic and by 91.7% during the pandemic. Moreover, 60.2% of the children were found to have their own technological devices during the coronavirus disease 2019 pandemic including tablets in 68.8% and mobile phones in 54.9%. It was also detected that technological device usage lasted for 3 – 4 hours among 27.6% and for 5 – 6 hours among 27.9% per day; 52.3% were watching TV for 1 – 2 hours per day. It was determined that the rate of owning and time for using a technological device were increased during the COVID-19 pandemic.

Keywords: Children, device, family attitudes, technology

Introduction

The rapidly increasing use of technological devices and the internet today has been accelerated by the effect of the coronavirus disease 2019 (COVID-19) pandemic (Sun et al., 2020). It was found that precautions (such as isolation, quarantine, and social distancing) are taken for preventing the spread of the virus in order to avoid the struggle with the COVID-19 pandemic (Jiloha, 2020). The continuation of the responsibilities at work and education lives through internet and spending longer times on the internet for playing games and shopping were effectively increasing, and the parents experienced difficulties in controlling internet use of

both themselves and their children (Baltacı et al., 2021; King et al., 2020; Király et al., 2020; Lin, 2020; Shanley, 2020; Telli Yamamoto & Altun, 2020). The children, who had to continue education online during the pandemic, met their needs by having access to education materials, entertainment, and socializing with each other by using technological devices (Mathew & Krishnan, 2020; Wiederhold, 2020). It is expected to see an increase in mental health problems varying from sleeping disorders, anxiety, phobia, and panic to dissociative disease-like symptoms during this crisis (Kar et al., 2020; Lin, 2020). Besides, it has been indicated that the time spent on the internet would create a risk in terms

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Received: December 17, 2021

Accepted: March 26, 2022

Available Online Date:

June 30, 2022

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Cite this article as: Tural Büyük, E., Uzsen, H., & Koyun, M. (2022). Family attitudes toward the use of technological devices by children during COVID-19. *Addicta: The Turkish Journal on Addictions*, 9(2), 189-195.

of problematic internet use and technology addiction (Gökler & Turan, 2020; Lin, 2020). Healthy psychosocial development of the children is dependent on an effective parent – child interaction (Kaya et al., 2018; Yasacı & Mustafaoğlu, 2019). In the previous studies, internet addiction levels of the children of authoritarian families were found to be higher than the children of families with democratic parenting attitudes (Kapudere, 2020; Taş, 2018). The personality and behaviors of the children, who have been looking at the screen since infancy, are affected by the images and content to which they are exposed on the internet. In the performed studies, it has been reported that frequent use of technological devices and spending a long time on the internet negatively affect the psychosocial development of the children and their skills of establishing and maintaining relationships. It was also reported that this circumstance prevented their socialization by making them spend less time with their peers and family members (Qutoshi et al., 2020; Snape & Viner, 2020).

This study aimed to find out the technological device using behaviors of the children and the attitudes of their families regarding this during the COVID-19 pandemic.

Methods

Study Design

The study was carried out as descriptive research. It was approved by the Ethics Committee of a University Social Sciences and Humanities Research and Publication (2021-510).

Participants and Recruitment

The confidence interval was accepted as 95 – 99%, and the sample calculation was made from the unknown population. The number of mothers to be sampled is 384. The universe of the study was composed of 671 mothers with 0- to 18-year-old children who were contacted through social media. Inclusion criteria of the study were approving to participate in the study, being able to read and write the Turkish language, and filling out the necessary forms completely. Data were collected online from social media (Facebook, Twitter, Instagram, mail, etc.) through Google forms. “Descriptive Information Form” including sociodemographic data of the families generated by the researcher and “Technological Device Usage Attitudes Form” including questions generated by the researcher to determine technological device usage behaviors of the parents and children and the attitudes of the families on this issue were used to collect data of the study (Masood et al., 2021; Öztürk Eyimaya & Yalçın Irmak, 2021; Ting et al., 2020, Wang et al., 2020). The study was conducted with the mothers who approved to participate in the study voluntarily.

Statistical Analysis

Statistical Package for the Social Sciences 22.00 package program was used to analyze data obtained in the study. Descriptive statistics of data were carried out with frequency and percentage distribution based on the demographic characteristics of the mothers.

Results

The mean age of the parents included in the study was found to be 35 ± 7 years; 89.1% were females and 31% were secondary

school graduates. It was determined that 38% of the parents were employed and 73.7% of the employed ones were working full time. It was also found that 40.1% of the parents included in the study had children aged between 0 and 6 years and 48.3% had 7- to 13-year-old children. Sociodemographic characteristics of the parents were given in Table 1.

It was determined that the most frequently used technological devices were mobile phones by 93.1%, television by 100%, and computer by 50.5% of the parents. A total of 47.8% of the parents stated that they acquired information about daily usage of digital technology from the teachers and 36.5% declared that they had information regarding parenting from the relevant blogs/websites. It was also found that 40.7% of the parents experienced problems due to long-term use of technological devices, 93.3% were following their child while using the internet, 43.4% were using a child protection program on the internet, and 69.6%

Table 1. Sociodemographic Characteristics of the Parents

Sociodemographic Data		n	%
Age			
X ± SD (Min – Max)	20 – 39	468	69.7
	35 ± 7 (20 – 57)	203	30.3
Sex			
	Female	598	89.1
	Male	73	10.9
Education			
	Elementary school	115	17.1
	Secondary school	208	31.0
	High school	108	16.1
	University	240	35.8
Income status			
	Income less than expenses	99	14.8
	Income equal to expenses	452	67.4
	Income more than expenses	120	17.9
Employment status			
	Employed	255	38.0
	Unemployed	416	62.0
Employment type			
	Full time	188	73.7
	Part-time	43	16.8
	Remote	23	9.0
	In shift	27	10.5
Number of siblings			
	1	214	31.9
	2	232	34.6
	3 and more	225	33.5
Age of the child			
	0 – 6	269	40.1
X ± SD (Min – Max)	7 – 13	324	48.3
	7 ± 4.1(0 – 21)	80	11.6
Sex of the child			
	Female	369	55.0
	Male	302	45.0

SD = standard deviation.

Table 2.
Technology Usage Features of the Parents During COVID-19 Pandemic

Technological device that is most frequently used by the parents	<i>n</i>	%
Computer	339	50.5
Mobile phone	625	93.1
Tablet	253	37.7
Smartwatch	56	8.3
Television	671	100
Game console	25	3.7
Information sources of the parents for daily time of digital technology usage	<i>n</i>	%
Written sources such as magazines and books	238	35.4
Other parents	155	23.0
Blogs/websites regarding parenting	245	36.5
Teachers	321	47.8
Social media	214	31.8
Healthcare professionals	171	25.4
	Yes	No
Do you have information about daily digital technology usage time of your child?	440 (65.6)	231 (34.4)
Do you experience problems with your child due to long-term usage of technological devices?	273 (40.7)	398 (59.3)
Do you follow your child while using internet?	626 (93.3)	45 (6.7)
Do you use child protection program while using internet?	291 (43.4)	380 (56.6)
Do you think that you are successful in effectively managing to bring rules/restrictions regarding technological devices (mobile phone, tablet, internet, etc.)?	526 (78.4)	145 (21.6)
Do you think that you are successful in effectively managing to bring rules/restrictions about watching TV?	550 (81.9)	121 (18.0)
Are you worried about digital technology usage of your child?	467 (69.6)	204 (30.4)

were worried about digital technology usage of their children (Table 2).

It was determined that 60.1% of the parents were using a technological device for 1 – 2 hours, 49.3% were using mobile phones for 1 – 2 hours, and 56.9% were watching TV for 1 – 2 hours per day (Table 3).

It was found that a technological device was used by 78.1% of the children before the COVID-19 pandemic and by 91.7% during the pandemic. Moreover, 60.2% of the children were found to

have their own technological devices during the COVID-19 pandemic including tablets in 68.8% and mobile phones in 54.9%. It was also detected that technological device usage lasted for 3 – 4 hours among 27.6% and for 5 – 6 hours among 27.9% per day; 52.3% were watching TV for 1 – 2 hours per day (Table 4).

Based on the results, it was found that 69.6% of the parents were worried about the use of digital technology. Among these parents, 67.6% indicated their worrying reasons as social problems, physical and psychological problems, and educational problems. These were listed in Table 5.

Table 3.
Technological Device and Mobile Phone Usage and TV Watching Times of the Parents During COVID-19 Pandemic

Technological Device Usage Time/Day	Parent, <i>n</i> (%)		Child, <i>n</i> (%)		Daily TV Watching Time/Day	Parent, <i>n</i> (%)		Child, <i>n</i> (%)	
	1 – 2 hours	403 (60.1)	166 (24.7)	1 – 2 hours		382 (56.9)	354 (52.8)		
3 – 4 hours	153 (22.8)	185 (27.6)	3 – 4 hours	215 (32.0)	215 (32.0)				
5 – 6 hours	70 (10.4)	187 (27.9)	5 – 6 hours	58 (8.6)	85 (12.7)				
7 hours and more	45 (6.7)	133 (16.9)	7 hours and more	16 (2.3)	17 (2.5)				

COVID-19 = coronavirus disease 2019.

Table 4.
Technological Device Usage and TV Watching Features of the Children During COVID-19 Pandemic

Before COVID-19 Pandemic	n	%	During COVID-19 Pandemic	n	%
Technological device using status of the child			Technological device using status of the child		
Yes	524	78.1	Yes	613	91.4
No	147	21.9	No	58	8.6
Status of having own technological device			Status of having own technological device		
Yes	327	48.7	Yes	404	60.2
No	344	51.3	No	267	39.8
Technological device owned by the child*			Technological device owned by the child*		
Computer	124	37.9	Computer	150	37.1
Mobile phone	208	63.6	Mobile phone	222	54.9
Tablet	214	65.4	Tablet	278	68.8
Smartwatch	29	8.8	Smartwatch	34	8.4
Daily technological device usage time			Daily technological device usage time		
1 – 2 hours	404	60.2	1 – 2 hours	166	24.7
3 – 4 hours	201	30.1	3 – 4 hours	185	27.6
5 – 6 hours	58	8.6	5 – 6 hours	187	27.9
7 hours and more	8	1.1	7 hours and more	133	19.9
Daily TV watching time			Daily TV watching time		
1 – 2 hours	409	61.0	1 – 2 hours	354	52.8
3 – 4 hours	210	31.3	3 – 4 hours	215	32.0
5 – 6 hours	48	7.2	5 – 6 hours	85	12.7
7 hours and more	4	0.5	7 hours and more	17	2.5

COVID-19 = coronavirus disease 2019.

Discussion

In the study, it was found that the state of owning a technological device, the device usage times, and TV watching times were increased during the COVID-19 pandemic. It was also found

that especially the ratio of children who spent 5 hours and more with a technological device and TV was elevated. Also, in many studies, an increase was reported in technological device usage and the time spent with these devices during the COVID-19 pandemic (Masoed et al., 2021; Ting et al., 2020, Wang et al., 2020).

Table 5.
The Problems Observed Among the Children Due to the Use of Digital Technology

Do you experience problems in your child due to long-term use of the technological device?			Do you experience problems in your child due to long-term TV watching?				
Yes	n (%)	No	n (%)	Yes	n (%)	No	n (%)
	273 (40.7)		398 (59.3)		177 (26.4)		494 (73.6)
Problems experienced in your child due to long term use of technological device*			Problems experienced in your child due to long term TV watching *				
Headache			91 (33.3)	Headache			65 (36.7)
Neck/back pain			82 (30.0)	Neck/back pain			40 (22.5)
Sleeping problems			124 (45.4)	Sleeping problems			86 (48.5)
Anxiousness/frequent crying jags			38 (13.9)	Anxiousness/frequent crying jags			45 (25.4)
Tantrum/short temper			81 (29.6)	Tantrum/short temper			31 (17.5)
Eating problems			82(30.0)	Watering and pain in the eyes			60 (33.8)
Watering and pain in the eyes			173 (63.3)	Eating problems			130 (73.4)

According to the results of international research examining media consumption at home, it was reported that 67% of the individuals watched more news broadcasts, 45% spent more time with messaging services, 44% spent more time in social media, and 36% for playing computer/video games. Besides, Z generation (62%) was found to spend more time with messaging services at home compared to X (40%) and Y (45%) generations during the pandemic. The highest increase in media use was observed in the Z generation (<https://www.statista.com/statistics/1170640/in-home-media-consumption-changes-post-coronavirus-world-wide-by-country>). In a study conducted in our country, 71.7% of the parents stated that their children were spending more time in front of the screen, and inconsistent parenting attitudes and lack of rules regarding the time for watching TV at home were found to affect watching time of the child negatively during the pandemic (Öztürk Eyimaya & Yalçın Irmak, 2021). Moreover, the technological device using features and TV watching times of the parents were indicated to affect the behaviors of the children for using these devices (Hu et al., 2018; Masoed et al., 2021). It was also reported that curfew and social isolation measures increased especially the consumption of digital entertainment such as online games; an increase of around 70% was seen in online game activities and internet traffic regarding games (Daniele & Niclas, 2020). In the study by Balhara et al. (2020), it was determined that the time for playing games on the internet was increased among 50% of the students in order to cope with stress during the pandemic. It was also determined in the study by Lin (2020) that internet addiction was high among secondary school students during the pandemic. Although 93.3% of the parents stated that they followed their children while using the internet, only 43.4% of them declared that they were using child protection programs. Children and adolescents are influenced by inappropriate content and broadcasts, and they shape their behaviors and physical-emotional responses especially by observing their environment (Livingstone et al., 2017; Wiederhold, 2020). News, images, and posts that are published with the concern of achieving ratings and more users may cause children and adolescents to experience mental problems in the ongoing process (Holmes et al., 2020; Kaya et al., 2018; Sarman et al., 2020). Although 89.9% of the parents thought that they were successful in managing to bring rules/restrictions for technological device usage (mobile phone, tablet, internet, etc.) of their children, they were worried about the increased daily usage time of technological devices and the use of digital technology by their children. Also in a study carried out in Egypt, it was determined that 80% of the children spent too much time in front of the screen during the COVID-19 pandemic despite the restrictions made by their mothers for watching TV (Masoed et al., 2021). In another study which was conducted in our country, daily preoccupation times of the children were found to be increased (71.7%) during the pandemic although most of the mothers (89.6%) stated to put some limitations about the use of technological devices (Öztürk Eyimaya & Yalçın Irmak, 2021). We think that lockdown and working at home during the pandemic might cause parents to balance their efforts to spend time with both their job and their children. Moreover, this reminds us that parents, who could not present a consistent attitude regarding technological device usage before the COVID-19 pandemic, introduced more technological devices to their children to reward, punish, or occupy them. It was found that parents were worried that the use of digital technology

might cause physical, psychological, and educational problems among their children. It has been indicated that COVID-19 pandemic may have direct or indirect psychological and social effects on the individuals and may affect mental health negatively in the future (Holmes et al., 2020; Salman et al., 2020). Recent studies have shown that mental health problems are increased among children and adolescents during pandemics (Duan et al., 2020; Sellers et al., 2019; Ting et al., 2020; Wand et al., 2020). In this study, parents stated that they mostly observed eye-related health problems due to the use of these devices. Also in relevant studies, an increase was observed in sight- and eye-related health problems during the COVID-19 pandemic (Amit et al., 2021; Lanca & Saw, 2020; Mohan et al., 2021). Parents also reported in the study that the social relationships of their children were also affected due to technological devices. Similar results were found in the previous studies (Mathew & Krishnan, 2020). In the study, parents also indicated that they experienced sleeping-related problems. Studies have shown that technological device use may be associated with sleeping disorders among children and adolescents (Janssen et al., 2020; Mireku et al., 2019). In addition, a sedentary lifestyle and increase in food intake during COVID 19 pandemic were found to increase the risk of obesity and cardiovascular diseases such as hypertension (Cuschieri & Grech, 2020; Nagata et al., 2020).

Limitations and Directions/Suggestions for Future Research

The study reflects the pandemic conditions of the winter season in 2021 because the data of this study were collected in that season. In addition, data were collected using web tools. The research data about the use of technological devices were collected in the form of categorical data. The database is not suitable for performing correlation analysis.

Parents should be careful and attentive to technological device usage behaviors of their children and they should protect them against possible problems. During the pandemic, which is full of uncertainties, families, managers, and the government are required to undertake important tasks in order to help children to survive this process with minimum damage. Television programs or social media platforms that children watch during the pandemic should be followed, and they must be provided to stay away from any content that may have a negative influence on them. Media managers should be aware of the effects of content released on several digital platforms on the physical, mental, and social health of children and adolescents. For that reason, all contents need to be strictly controlled before being released including informative news. Legal regulations should be provided and implemented to prevent exposure of children and individuals of all ages to media-based negative effects. Any posts shared on various media platforms should be controlled, and necessary legal procedures should be started for the institutions, managers, or individuals who serve broadcasts that have the potential to cause problems in physical, mental, and social aspects. Parents should be informed about the issues such as technological device usage time, appropriate media content, and using a child protection program on the internet according to the age of the child. Parents are role models; regulating their technology usage behaviors such as social media use and aimless surfing on the internet will help children to provide their control. Besides, parents

are recommended to join their children active during technology use. The willingness of the parents in this regard will aid children to increase controllable use of technology and to regulate overuse of it. Sharing quality time with family members and having entertainment in the social activities performed together are highly important in terms of the continuity of their relationships. Family members should spend regular time together.

Based on the study results, it was determined that the rate of owning and time for using a technological device were increased during the COVID-19 pandemic. Although families were found to think that they were effective in managing technological device usage behaviors of their children, the ratio of using a child protection program on the internet was found to be low, and this is another subject that needs to be examined in more detail.

Ethics Committee Approval: The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Ethics Committee of a University Social Sciences and Humanities Research and Publication (protocol code 2021-510 and date of approval May 28, 2021).

Informed Consent: Written informed consent was obtained from all participants who participated in this study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - E.T.B., H.U.; Design - H.U., M.K.; Supervision - E.T.B.; Materials - E.T.B., H.U.; Data Collection and/or Processing - H.U., M.K.; Analysis and/or Interpretation - H.U., M.K.; Literature Review - E.T.B., H.U.; Writing - H.U., M.K.; Critical Review - E.T.B.

Declaration of Interests: The authors have no conflicts of interest to declare.

Funding: The authors declared that this study has received no financial support.

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