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# Relationship Between Parenting Practices and Children's Screen Time During the COVID-19 Pandemic in Turkey

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## ABSTRACT

**Purpose:** This study investigates the relationship between parenting practices and children's screen time following the COVID-19 outbreak.

**Design and methods:** The population of the present cross-sectional study was the parents of children studying in three randomly-selected schools in the western, eastern and central regions of Turkey. The study data were collected between May 15 and 31, 2020, using a descriptive questionnaire form and the Parenting Practices Scale applied to 1115 parents of children between 6 and 13 years of age. The data were analyzed using the SPSS 21.0 software package, and with descriptive, correlation and multiple regression analyses.

**Results:** It was noted that 68% of the mothers did not work, and 40.2% of the fathers had shifted to a flexible work arrangement as a result of the COVID-19 pandemic. The study revealed that 89.6% of the families had established ground rules related to screen time, and that the screen time of the children of 71.7% of the families had seen an increase, amounting to  $6.42 \pm 3.07$  h/day. Gender, age, household income, mother's employment status, family's rules about screen time, and inconsistent parenting practices were defined as significant predictors in the children's screen time model created for the study.

**Conclusions:** A vast majority of the participants stated that their children's screen time had increased during the COVID-19 pandemic.

**Practice implications:** Screen time should be monitored, the necessary support should be provided to children, and parents should set ground rules for their children's screen times.

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## Introduction

Since the initial outbreak in the city of Wuhan in China in December 2019, the Coronavirus (COVID-19) has spread all around the world, and is showing no sign of slowing down (World Health Organisation, 2020). After being classified as a pandemic by the World Health Organization (WHO), governments have taken many measures to manage the public risk associated with COVID-19, including the temporary closure of education institutions, movie theaters, theaters, museums and sports facilities, remote working, lockdowns, etc. In Turkey, the government closed all schools in the country on March 16, 2020 as an emergency measure to curb the spread of COVID-19, and shifted to remote education. Beginning from April 3, 2020, the government further applied a temporary lockdown on children and young people under the age of 20 (Türkiye Cumhuriyeti İçişleri Bakanlığı, 2020), drastically increasing the time spent by children, like many other people, at home, affecting their daily lives considerably. Especially in urban areas, where children

were forced to spend their mass quarantine in small apartments, away from their social circles, schools and hobbies, non-physical activities and screen time were likely to increase. The initial reports from China's pandemic-stricken regions indicate that media entertainment was the most popular tool used by parents to address their children's problems and to mitigate the effects (Jiao et al., 2020). Furthermore, it was a striking finding that record numbers of people, in all age groups, were turning to online video games (Wilde, 2020). When applied as a coping strategy amid the COVID-19 pandemic, screen time may be associated with certain negative risks among children. Indeed, there have been many studies associating increased screen time, i.e. the time spent looking at the screens of smart phones, computers, tablets, televisions and game consoles, with obesity, poor oral hygiene, poor general health, myopia, unhealthy weight gain, and social or emotional problems such as low self-respect (McCurdy, Winterbottom, Mehta, & Roberts, 2010; McDool, Powell, Roberts, & Taylor, 2020; Russ, Larson, Franke, & Halfon, 2009).

Parents are in the best position to provide support to their children through effective communication and interaction, and to distract them from unlimited and uncontrolled screen time during mass quarantine. Previous studies have highlighted that the most effective means of

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reducing children's screen time is through parent-assisted behavioral change (Samaha & Hawi, 2017; Thompson et al., 2018). Good parenting practices are defined as providing the necessary support for a child's physical, emotional, social and intellectual development (Baydar, Akçınar, & İmer, 2012; Kahraman, Yılmaz Irmak, & Basokcu, 2017). Healthy communication with children and good parenting practices are key factors in the identification of physical and psychological problems in the early period, and in helping children relax during long-term isolation (National Health Commission of the People's Republic of China, 2020). Good parenting practices in particular gain significance during the lockdown of children in the home (Wang, Zhang, Zhao, Zhang, & Jiang, 2020). The term "parenting practices" refers to the observable behaviors of parents toward their children that support children in social activities and in reaching certain targets (Baydar et al., 2012; Kahraman et al., 2017). Negative parenting practices, on the other hand, such as criticism and violence, increase the likelihood of such behavioral problems as dissonance, disobedience and aggression emerging in children (Kahraman et al., 2017; Raya, Ruiz-Olivares, Pino, & Herruzo, 2013). Mass quarantine at home may serve as an opportunity to improve the interaction between parents and children, to include children in family activities and to develop their self-sufficiency skills. Proper parenting approaches may help strengthen family ties and satisfy children's psychological needs (Perrin, Leslie, & Boat, 2016; Wang et al., 2020), however living conditions in the home have been changed suddenly and profoundly by the COVID-19 outbreak, causing such problems as food shortages, suspended work, either paid or unpaid, mandatory lockdown, the need to home educate and an inability to cover expenses (Vessey & Betz, 2020). Though the more time spent at home during the COVID-19 pandemic means spending more time with family members, it also places a burden on parents' shoulders (Spinelli, Lionetti, Pastore, & Fasolo, 2020). The present study investigates the screen time of children aged 6–13 years, and the relationship between the parenting practices of families and the screen time of children during the COVID-19 pandemic. Identification of the screen time of and its negative effects on children, i.e. the vulnerable group, will serve as a reference for family-based practices in the event of possible pandemics in the future. The research questions investigated in this study included: During the COVID-19 pandemic,

1. What is the screen time of children aged 6–13 years?
2. What is the parenting practice level of parents?
3. Is there a relationship between parents' parenting practice levels and children's screen time?

## Method

### Design and participants

The present cross-sectional design study focuses on the parents of children attending three different schools studying in grades 1–8, aged between 6 and 13 years. Since all public primary schools in Turkey receive the same amount of funding from the government, no socio-economic categorization was made between the schools. Therefore, the schools located in the western, eastern and central regions of Turkey were listed individually, and the three schools were selected randomly. The selected schools had 305 (western region), 526 (eastern region) and 713 (central region) students, and parent participation rates were 70.49%, 71.04% and 70.12%, respectively. All three schools that participated in the study were state schools.

### Instruments

The data were collected using a descriptive questionnaire form and the Parenting Practices Scale. The descriptive questionnaire form included questions on socio-demographic characteristics, the COVID-19 pandemic and screen time, and was created by the researchers based

on a literature review (Hu, Johnson, & Wu, 2018; Kahraman et al., 2017; King, Delfabbro, Billieux, & Potenza, 2020; King, Koster, & Billieux, 2019).

The Parenting Practices Scale (PPS), on the other hand, is a 4-point Likert-type scale (never = 1, occasionally = 2, frequently = 3, always = 4) involving 52 items and six sub-dimensions, which was developed by Kahraman et al. (2017) for the assessment of the positive and negative practices of parents toward primary school children (Kahraman et al., 2017). The Positive problem-solving sub-dimension assesses the communication style used by parents while talking with their children, and their effective problem-solving methods, which usually involve effective listening, warm and open communication, empathy, and adopting a behavior that meets their level while teaching them certain skills. The Negative problem-solving sub-dimension assesses the ineffective problem-solving methods applied by parents, such as behaving aggressively, in a critical or accusing manner, or making things difficult for others. The Over-reactive sub-dimension includes items to assess the over-reactions of parents, such as physical violence toward children and preventing their autonomy. The items in the Inconsistent sub-dimension assess whether the rules defined for children are applied consistently. The Functional family sub-dimension assesses family members and the continuity of family functions, which include obeying family rules and maintaining a favorable atmosphere among family members. The Interactive sub-dimension involves questions evaluating parent-child activities. The range of possible scores from this scale is 52–208, with higher sub-dimension and total scores indicating better parenting practices. The Cronbach's Alpha value of the scale is 0.91 (Kahraman et al., 2017), while the Cronbach's Alpha value of the present study was found to be 0.88.

### Data collection

The online questionnaire was shared with the parents of children aged 6–13 years for a limited period of time between May 15 and 31, 2020, approximately 45 days after the lockdown of children had been announced. The study topic was explained to the school administration and teachers before the collection of data. The teachers of the three schools participating in the study were reached through school administrators. The administrators and teachers were asked to forward our online data collection form to the social communication forums of the parents, and the parents were invited to participate in the study. In cases where the parents had more than one child, they were asked to fill the form for only one of them. They were also informed that it would take approximately 15 min to fill out the form. For the questions on screen time, the parents were asked to ignore the time their children spent on academic studies, including the time spent doing homework and online classes.

### Ethical consideration

A Research Permit was obtained from the Republic of Turkey Ministry of Health, and the Namık Kemal University Faculty of Medicine Non-invasive Clinical Trials Ethics Committee provided ethical committee approval. An Informed Consent form was included as the first page of the online data collection form. The parents filled out the data collection form after reading the consent form and agreeing to participate in the study voluntarily.

### Data analysis

The data were analyzed using the SPSS 21.0 (Statistical Package for Social Sciences) package program. Skewness and kurtosis were examined to determine the normality of the data. The numerical variables in the study were expressed as mean, standard deviation, minimum and maximum, while categorical and nominal variables were expressed as frequencies and percentages. Correlations between the predictor

variables were analyzed to identify any collinearity problems with the data. A decision was then made on which items to drop from the multiple regression model, based on the level of correlation and theoretical considerations. Multiple regression models were generated for the dependent variable. Independent sample *t*-tests (not reported) were used to identify the group creating the difference in significant relationships. In the calculations, the statistical significance level was accepted as 5%. The results were analyzed based on a 95% confidence interval and a  $p < .05$  significance level.

**Results**

Table 1 presents the findings related to the families' and children's characteristics during the COVID-19 home isolation, based on 1115 questionnaire forms filled out by the families. As can be understood, 53.4% of the children were female, and the mean age of the sample was  $9.03 \pm 1.95$  (min: 6; max: 13); 43.1% of the families reported an income of 2001–4000 Turkish Liras; 68% of the mothers stated that they did not work, and 40.2% of the fathers said that they had shifted to a flexible working arrangement as a result of the COVID-19 outbreak. Of the families, 89.6% stated that they laid down ground rules for their children's screen time (television, computer, tablet, mobile phone, play station etc.) during the COVID-19 outbreak, while 71.7% said that their children's screen time had increased in this period, reaching a daily average of  $6.42 \pm 3.07$  (min: 0; max: 15) hours.

The correlation analysis revealed that the child's age ( $9.03 \pm 1.95$ ;  $p \leq .001$ ), and negative problem solving ( $30.60 \pm 2.82$ ;  $p \leq .001$ ),

over-reactive ( $40.59 \pm 3.40$ ;  $p \leq .001$ ) and inconsistent ( $15.93 \pm 2.06$ ;  $p \leq .001$ ) parenting practices were positively correlated with the screen time of children. The functional family ( $31.49 \pm 3.53$ ;  $p \leq .05$ ) and interactive ( $14.34 \pm 2.72$ ;  $p \leq .001$ ) parenting practices sub-dimensions, on the other hand, were found to be negatively correlated with screen time (Table 2). No correlation was identified between the number of children at home ( $2.07 \pm 0.78$ ) and positive problem solving ( $39.53 \pm 5.04$ ) parenting practices ( $p > .05$ ).

A multiple regression analysis was conducted for children's screen time, as a dependent variable (Table 3). The model explaining the screen time of children between the ages of 6 and 13 years during home isolation amid the COVID-19 pandemic ( $R^2 = 0.132$ ,  $p = .000$ ) was found to be significant. For the screen time model, the child's gender (being male) ( $\beta = 0.067$ ,  $p \leq .05$ ), child's age ( $\beta = 0.249$ ,  $p \leq .001$ ), household income (low) ( $\beta = -0.104$ ,  $p \leq .001$ ), mother's employment status during COVID-19 pandemic (mothers who have shifted to a flexible work arrangement, and those who continue to work at their usual workplaces during the mass COVID-19 quarantine) ( $\beta = 0.101$ ,  $p \leq .001$ ), house rules regarding screen time (no rule) ( $\beta = -0.142$ ,  $p \leq .001$ ) and inconsistent parenting practices ( $\beta = -0.157$ ,  $p \leq .001$ ) were significant predictors, explaining 13% of the variance.

**Discussion**

Screen time is a significant problem, especially among children who are under long-term mass quarantine. The present study is the first to investigate the relationship between parenting practices and children's screen time during the COVID-19 pandemic. The results of the study can be considered worthy of note, as the sample number is high, and the data were collected in the final days of a long lockdown period, with the aim being to identify the cumulative effect of the lockdown in a clearer manner.

Of the parents, 71.7% stated that their children's screen time had increased during the COVID-19 pandemic, reaching approximately 6.42 h/day, which is one of the most striking findings of the study. There have been previous studies in literature suggesting that the daily screen time of children had increased with the onset of pandemic, from approximately 3 h to 6 h (Parents Together, 2020). Using creative and educational screen media options that are appropriate for the child's age, in a controlled manner and with certain limitations, may be a part of a lifestyle that may even provide some developmental benefits to the child (Barr, Lauricella, Zack, & Calvert, 2010; De Decker et al., 2012; Hill et al., 2016; Hu et al., 2018; Sweetser, Johnson, Ozdowska, & Wyeth, 2012). That said, a vast majority of children have been observed to have exceeded the 2 h or fewer screen time/day recommendation of the American Academy of Pediatrics (AAP) while isolating at home during the COVID-19 pandemic. It was further observed that children who were away from their social circles, schools and hobbies during their mass quarantine spent most of their free time engaged in on-screen

**Table 1**  
Descriptive characteristics of parents and children (n = 1115).

Descriptive characteristics	Number	Percentage
Gender of the child		
Female	597	53.4
Male	520	46.6
Household income* (TL/month)		
2000 and less	147	13.2
2001–4000	481	43.1
4001–6000	250	22.4
6001–10,000	163	14.6
10,001 and more	76	6.8
Mother's employment status during COVID-19 pandemic		
I do not work (I was not working previously / I was discharged / I am currently on leave, without pay)	760	68
I have shifted to flexible work arrangement	264	23.6
I am continuing to work in my usual workplace; nothing has changed	93	8.3
Father's employment status during COVID-19 pandemic		
I do not work (I was not working previously / I was discharged / I am currently on leave, without pay)	257	23
I have shifted to flexible work arrangement	449	40.2
I am continuing to work in my usual workplace; nothing has changed	411	36.8
Screen Time during COVID-19 pandemic (hours/day)**	$6.42 \pm 3.07$ (mean $\pm$ SD) (min: 0 max: 15)	
Application of screen time rules at home during COVID-19 pandemic		
Yes	1001	89.6
No	116	10.4
What effects has the COVID-19 pandemic had on your child's screen time?		
Caused an increase	801	71.7
Caused a reduction	57	5.1
Had no effect	259	23.2

\* 1 USD Dollar = 6.74 Turkish Liras.

\*\* Parents' reports on their children's daily screen times, including watching television and using computer/watching videos etc.

**Table 2**  
Bivariate correlations between some of the descriptive characteristics of parents and children, and parenting practices and children's screen time (n = 1115).

Descriptive characteristics	Mean (SD)	Min-Max	Screen time (hours/day)	p-Value
Child's Age (years)	9.03 (1.95)	6–13	0.262	<0.01
Number of children at home	2.07 (0.78)	1–5	–0.010	
Parenting Practices Scale	172.48 (13.55)	124–203		
Positive Problem Solving	39.53 (5.04)	18–48	–0.004	
Negative Problem Solving	30.60 (2.82)	18–36	0.105	<0.01
Functional Family	31.49 (3.53)	16–36	–0.069	<0.05
Over-reactive	40.59 (3.40)	27–48	0.115	<0.01
Inconsistent	15.93 (2.06)	6–20	0.166	<0.01
Interactive	14.34 (2.72)	7–20	–0.130	<0.01



**Table 3**  
Regression model predicting screen time behaviors (n = 1115).

Model	Variables	B	SE	Standard $\beta$	p-Value	F	Adjusted R <sup>2</sup>
Screen time during COVID-19 pandemic	Constant	7.805	1.317			16.402	0.132
	Gender of the child	0.413	0.172	0.067	$\leq 0.05$	$p \leq .001$	
	Child's age (years mean $\pm$ SD)	0.393	0.045	0.249	$\leq 0.001$		
	Household income	-0.290	0.088	-0.104	$\leq 0.001$		
	Mother's employment status during COVID-19 pandemic	0.486	0.150	0.101	$\leq 0.001$		
	Father's employment status during COVID-19 pandemic	-0.015	0.115	0.004			
	Presence of screen time rules in the home during COVID-19 pandemic	-1.429	0.296	-0.142	$\leq 0.001$		
	Parenting Practices Scale						
	Negative problem solving	-0.005	0.040	-0.005			
	Functional family	0.051	0.029	0.059			
	Over-reactive	-0.018	0.032	-0.019			
	Inconsistent	-0.234	0.048	-0.157	$\leq 0.001$		
	Interactive	-0.073	0.038	-0.064			

Presence of screen time rules in the home during COVID-19 pandemic: 0 = no rules; 1 = rules are present.

pursuits after their distance education classes. That said, the physical and psychological needs of adolescents and children have not changed, nor have such needs diminished during the crisis (*American Academy of Child & Adolescent Psychiatry, 2020*). According to the American Academy of Child & Adolescent Psychiatry (*AACAP, 2020*), children should spend most of their time engaged in such activities as sleeping, doing schoolwork and reading for enjoyment, making social and family connections, doing physical activities and chores, etc. to ensure their proper and healthy development, rather than spending so much time engaged in on-screen pursuits.

The present study identified a correlation between screen time during the COVID-19 pandemic and negative problem solving, family functioning, and over-reactive, inconsistent and interactive parenting practices. A regression model was created to identify the multifactorial effect of the studied independent variables on children's screen time. Within the model, the child's gender (being male), child's age, household income (low), mother's employment status during the COVID-19 pandemic (mothers who have shifted to a flexible working arrangement, and those who continue to work at their usual workplaces during COVID-19 home isolation), house rules about screen time (no rules) and inconsistent parenting practices were defined as significant predictors. In a study by *Hu et al. (2018)*, a significant relationship was identified between screen time and the child's age, the parents' socio-economic status and presence of rules about screen time, which is consistent with the findings of the present study. The authors suggested that socio-economic status was negatively correlated with the screen time of children (*Hu et al., 2018*). On the other hand, *Bleakley, Jordan, and Hennessy (2013)* found a correlation between the child's gender and age, the parents' income and employment status and the child's screen time. In their study, *Carson and Janssen (2012)* noted a correlation between the child's age and gender, family income and screen time, and argued that the attitude of the parents was positively associated with children's high screen time.

In the present study, the age and gender of the children were significant determinants of screen time. Similar to our study, *Lloyd, Lubans, Plotnikoff, Collins, and Morgan (2014)* argued that the child's age and gender (male) were significant predictors of screen exposure. In their study involving 1218 children between the ages of 6 and 11 years, *Fakhouri, Hughes, Brody, Kit, and Ogdan (2013)* found that the daily  $\leq 2$  h of screen time was exceeded more by children between 9 and 11 years of age when compared to the 6–8 age group. They noted further that 47.3% of male and 45.7% of female children exceeded the 2-h screen time limit. *Sisson et al. (2009)* found in their study that 35% of children aged between 2 and 5 years exceeded the 2-h screen time limit, with rates of 49% and 56% among the 6–11 and 12–15 age groups, respectively. In their study involving 3141 children between the ages of 7 and 11 years, *Hawi and Rupert (2015)* found that the average screen

time was 2.43 h and 2.66 h per day for girls and boys, respectively. Of the study participants, 61.8% of the girls and 70.0% of the boys exceeded the AAP's screen time recommendation. These results may be attributed to inability of children to control their curiosity for technology as they age. Furthermore, the fact that boys spend more time on screen than girls may be attributed to society's traditional gender roles.

Screen activities are so absorbing that most children and adolescents lack the insight and discipline to limit their own screen time effectively (*American Academy of Child & Adolescent Psychiatry, 2020*). When parents stop limiting their children's screen time and setting rules, screen habits rapidly take over the lives of many adolescents, and may even replace significant daily activities (*American Academy of Child & Adolescent Psychiatry, 2020*). Another variable that has had an effect on screen time during the COVID-19 pandemic is the screen time rules. There have been many studies identifying the setting of house rules as an effective method of reducing screen time among children (*Barr-Anderson et al., 2011; Birken et al., 2011; Gingold, Simon, & Schoendorf, 2014; Hawi & Rupert, 2015; Hu et al., 2018; Xu, Wen, & Rissel, 2015*). In their study, *Hawi and Rupert (2015)* found that parents used screen time as a disciplinary tool. A study by *Barr-Anderson et al. (2011)* involving 431 children with a mean age of 5.8 found a link between the rules set by parents to limit the time spent watching TV and reduced screen times among children. In their study, *Birken et al. (2011)* reported that screen time rules decreased the weekend screen time of children by 30 min per day. Of the participants of the present study, 89.6% stated that they had set up screen time rules for their children who spent their time at home during the COVID-19 pandemic, while 71.7% said that their children's screen times had increased in this period. In a children's screen time model created in line with this paradox, another significant variable was inconsistent parenting practices, i.e. the inconsistent application of the rules set up for the children. In their study of 4770 parents with children between the ages of 6 and 11 years, *Samaha and Hawi (2017)* identified higher daily screen times among the children of parents who used screen media inconsistently to reward, punish and silence their children.

It is important for families to develop balanced and effective approaches toward screen use to support their physical and psychological well-being during the pandemic (*King et al., 2020*). The role of parents has become more important than ever for their children during the COVID-19 pandemic. For many parents, it is hard to keep their children busy at home and to spend quality time with them, and the struggle is even greater for larger low-income families. Most fail to fulfill their responsibilities to both their daily tasks and the supervision of their children throughout the day. In the applied model, low income and mother's employment status were found to be significant predictors of the screen time of children. The children of parents with a higher socio-economic status spend less time on screen than those of parents

with a lower socio-economic status (Bleakley et al., 2013; Carson & Janssen, 2012). Accordingly, a higher socio-economic status is associated with larger spaces, providing children with greater freedom, while parents with a lower socio-economic status encourage their children to spend more time in closed areas, leading to greater times spent on screen. Socio-economic status may also be associated with the education level of the parents and their choices of screen time.

### Practice implications

Long-term social isolation and longer periods spent on screen may lead to an unhealthy lifestyle, with the potential to lead to possible adaptation problems after the COVID-19 pandemic (King et al., 2019; King et al., 2020). After defining the predictors influencing screen time, based on concerns about the negative results of the unlimited and uncontrolled screen time of children, better interventions may be planned and programs developed for COVID-19 and possible future pandemics. For example, with educational materials that increase physical activity, children can be motivated to a healthy lifestyle at home. Social workers can play an active role, as needed, to help families deal with family issues arising from the pandemic. Furthermore, based on the study findings it can be said that effective strategies and intervention programs are needed for the training of parents to deter them from parenting practices that increase their children's screen time. All stakeholders, from governments to families, share the responsibility of minimizing the physical and mental effects of the COVID-19 pandemic on children. If properly supported by healthcare professionals, families and other social connections, including the school environment, children and adolescents can appropriately overcome conditions of distress and prospectively stabilize both emotionally and physiologically (Pettoello-Mantovani et al., 2019). The government can mobilize resources to create a platform for the provision of online training in healthy lifestyles and psycho-social support programs for schools.

### Limitations

This study involves some significant limitations that are worthy of note. First of all, the recorded children's daily average screen times were as reported by the families. Secondly, studies involving larger sample sizes will be required to define the relationship between screen time and parenting practices. Finally, the findings of the study cannot be generalized for all parents in Turkey.

### Conclusions

The present study investigates the relationship between parenting practices and children's screen time during the COVID-19 pandemic. A vast majority of the parents stated that their children's screen time had increased during the COVID-19 pandemic, reaching an average of  $6.42 \pm 3.07$  h/day. Such predictors as the child's age and gender, socio-economic status, the mother's employment status, the application of screen time rules and inconsistent parenting practices were defined as being influential on screen time.

It may be difficult for parents to control their children's screen time, while struggling to balance their personal life, working life and parenting responsibilities during the pandemic. During this period, children's screen times should be monitored, and support should be provided when required. Parents should set up rules about screen time, and should pay the utmost attention to not compromising on these rules, since setting rules such as these during the COVID-19 pandemic will steer the children's expectations. In line with these rules, artistic and physical activities outside the screen at least as much as screen time should be included in the daily schedule of the children. Parents are in the best position to provide support to their children through effective communication and interaction, and to distract them from unlimited and uncontrolled screen time during mass quarantine. It should be

highlighted that the most effective approach to limiting children's screen time is parent-assisted behavioral change. The screen time of the parents has a considerable effect on their children's screen time, and the role of parents should be taken into consideration in any interventions to reduce the screen time of children. As such, parents should be informed about screen use.

### Contributors

AYI and AOE conceptualized the study and organized the data collection. AYI and AOE wrote the first draft of the manuscript. AYI and AOE run the analyses and wrote the results section. AOE contributed to revision of the final version of the manuscript.

### Declaration of Competing Interest

Authors declare no competing interests.

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