



Pediatricians' Knowledge of Screen Use and Identifying of Own Children's Screen Use Habits

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Abstract

Aim: Guidelines for children have been developed to reduce the risks associated with screen use. We aimed to learn the knowledge of pediatricians with children aged 0-6 years about screen use and to identify the screen use habits of their own children.

Methods: This cross-sectional study was conducted among 212 pediatricians who had children aged 0-6 years between August and September 2023. Survey questions were created according to the American Academy of Pediatrics screen time recommendations. The questions were delivered to the pediatricians via social media.

Results: Of the pediatricians, 64.2% were mothers and 35.8% were fathers. The mean level of screen-use knowledge was 7.73 (maximum score =10). The pediatricians' average screening time during the day was 2.44 hours. There was a significant inverse correlation between the pediatricians' screen use knowledge level, their average screen time, and the duration of television use when the child was at home ($p=0.035$ and $p=0.010$, respectively). There was a difference between the institutions in which the pediatrician worked in terms of screen use knowledge levels ($p=0.018$).

Conclusion: Pediatricians were knowledgeable about screening guidelines. It is important for pediatricians to approach screening from a holistic perspective and integrate it into their practices.

Keywords: Child, media, screen time, pediatricians, physicians

Introduction

The number of screens in society is increasing day by day in our country, as in the world. One of the biggest reasons for this is that technology has become the building block of our lives, both in business and daily life. On the other hand, the ease of use, portability, and content capacity of screens (television, tablet, computer, etc.) are other factors that increase the use of screen-based media in society. However, recent studies have shown that screen media use starts at an early age (1,2). Young children and babies in this digital generation are exposed to more technology and use more devices than in previous years, thus increasing their screen time (3). Screen time definitions and guidelines for healthy screening in early childhood are still under debate (4).

Very early-onset screen exposure carries significant risks for children's health and development. Most studies have shown that children start using screen media before the age of two (2,5). Previous studies have shown that screen exposure in young children causes problems such as speech-language delay, sleep disturbance, obesity, school failure, depression, and anxiety (6-10). Although being healthy is possible with physical, psychological, and social well-being, the role of pediatricians is as effective in providing counseling to parents as it is in protecting the health of children. Pediatricians play a significant role in both protecting the health of children and counseling families about screen-based media guidelines.

To reduce the risks associated with screen use, guidelines have been developed that recommend

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appropriate time limits and considerations for screen time for children. The Canadian guidelines recommend no screen time for children under 2 years old; screen time should be 1 hour or less per day for children aged 2-5 years; and screen time should not be a routine part of childcare for children under 5 years old (2). The American Academy of Pediatrics (AAP) updated its media use recommendations in 2016. Although it does not provide a specific screen time limit, it emphasizes the importance of considering not only the quantity or duration of interactions but also the quality of interactions with digital media. According to the AAP guidelines, screen time should be avoided in children aged below 18 months, except for video chat. Between 18 and 24 months of age, parental involvement is very important and can be brief, provided that a parent finds high-quality programs and watches them with them. For children aged 2-5 years, screen time should be less than 1 hour a day, and children should watch with their parents to interpret and discuss what they watch. A family media plan with consistent rules is recommended. Six years and older should limit activities involving screens. All screens should be turned off during family meals and outings, and parents should avoid using screens as pacifiers, babysitters, or to stop tantrums. Screens should be turned off 30-60 minutes before bedtime and removed from the bedroom (11).

Our hypothesis is that pediatricians should have up-to-date knowledge and awareness about screening to be more sensitive when counseling families on these issues. In this study, we aimed to learn the knowledge of pediatricians who have children aged 0-6 years in our country about screen media use and to define the screen media use habits of their own children. With the results we obtained in our study, we expect to increase awareness about screen use and to create new suggestions and discussions on this subject by conducting research on a subject that has not yet been studied with pediatricians.

Methods

Compliance with Ethical Standards

Approval for the study was obtained from the Institutional Ethics Committee of the University of Health Sciences Turkey, Gazi Yasargil Training and Research Hospital (dated: 04.08.2023, approval no.: 491). This study was conducted in accordance with the Helsinki Declaration.

Study Design

A cross-sectional study was planned based on previous studies on screen and AAP screen time recommendations, and a cross-sectional study was planned by creating questions with yes/no, multiple choice, and multiple answers (12). A total of 217 pediatricians completed our questionnaire between August 2023 and September 2023, but the responses of 5 were not evaluated because of inconsistencies in their responses, and the study was conducted with 212 pediatricians with children aged 0-6 years who responded to our questionnaire between August and September 2023 (Figure 1).

The questions consisted of 3 parts. The first section provides demographic information about pediatricians. Age, gender, marital status, number of children, titles, geographical region in which they live, institution in which they work, years of employment, age, job, and educational status of their spouses were questioned. In the second section, pediatricians were questioned about their screen-use habits at home, their attitudes toward their children's screen use, the technological devices their children own, the technological devices and programs they allow their children to use, the amount of screen time they and their children spend in front of the screen, the age at which their children were introduced to media tools, and whether screen time is restricted or why. "Screen time" includes any time spent in front of a television or other screen device such as video games, computers, smartphones,

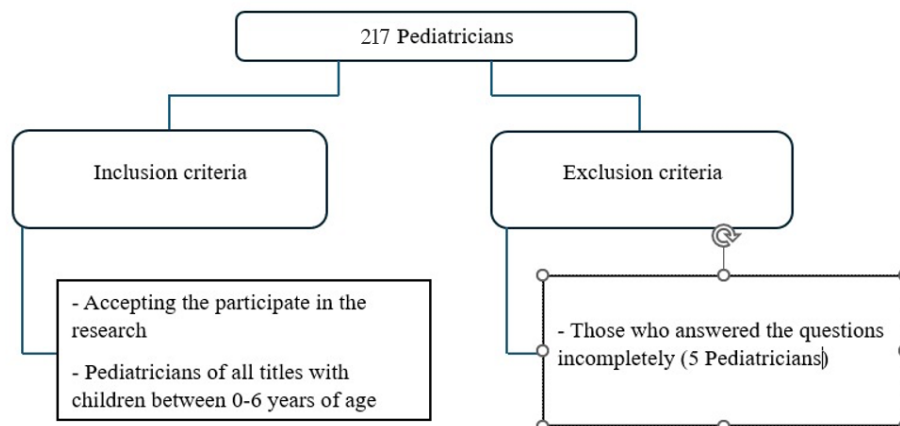


Figure 1. Flow diagram of the study

and tablets (13). "Screen media use" is defined as the use of these devices. In the third section, pediatricians' knowledge on screen use was questioned. There is a table with 10 questions and one multiple-choice question. The aim of this section was to determine the knowledge levels of pediatricians and their requests for screen use training. The questions about knowledge about screen use were scored, and the total score was calculated as "10" when all questions were answered correctly.

The questions were converted into questionnaires via Google Forms and delivered to the pediatricians via social media (e-mail, WhatsApp, telegram). Before starting the survey, brief information and contact information were given, and all questions were considered answered. Physicians were reminded 1 week after the first mailing, and the study was terminated after 1 month. Some questions were evaluated as ratios, and others were compared according to the demographic information of the physician.

Statistical Analysis

The conformity of the data to the normal distribution was examined using the Shapiro-Wilk test. The Mann-Whitney U test was used for comparisons between two independent and non-normally distributed groups, and the Kruskal-Wallis H test was used for comparisons between three groups. The Spearman correlation coefficient was used to determine the relationship between quantitative variables. Statistical analysis was performed using IBM SPSS Statistics for Windows. Version 25.0. Armonk, NY: IBM Corp., and $p < 0.05$ was considered statistically significant.

Results

Pediatricians of all titles participated in the study, and the majority of them were pediatric specialists and residents. Physicians from all regions participated in our study, mostly from the Aegean region and southeast Anatolia. State hospitals were the majority of the institutions where the participating pediatricians worked.

Table 1 presents additional sociodemographic data. The average screen time of pediatricians during the day was determined as 2.44 hours. Children's screen time on weekdays and weekends was categorized as intervals, and it was observed that as the quantitative value increased, the time allocated to the screen increased. Accordingly, on weekdays, the average screen time was 2.41 hours, and on weekends, it was 2.46 hours. When asked about the programs they allowed their children to use, more than half of them stated that they frequently watched cartoons and educational videos created for children. When the age at which children first watched electronic devices was considered, it was learned that television and telephone

Table 1. Socio-demographic characteristics		
Variables	n	%
Parental status		
Mother	136	64.2
Father	76	35.8
Marital status		
Married	200	94.3
Single	12	5.7
Number of children aged 0-6		
1	180	84.9
2	32	15.1
Child gender		
Female	104	49.1
Male	108	50.9
Spouse working status		
Yes	195	92
No	17	8
Spouse being a pediatrician		
Yes	35	16.5
No	177	83.5
Child's caregiver		
Spouse	26	12.3
Relative	72	34.0
Babysitter	51	24.1
Nursery	63	29.6
Title		
Pediatric Resident	45	21.2
Pediatric Specialist	94	44.3
Subspecialist	53	25.1
Assistant Professor	9	4.2
Assoc. and Prof.	11	4.2
Institution		
State hospital	114	53.8
University hospital	75	35.4
Private hospital	14	6.6
Clinic	9	4.2
Region		
Mediterranean	19	9.0
Marmara	37	17.5
Central Anatolia	27	12.7
Aegean	48	22.6
Black Sea	12	5.7
Southeast Anatolia	47	22.2
Eastern Anatolia	22	10.4

were frequently used between the ages of 1-2 years (33% and 25%, respectively), while tablets were used between the ages of 2-3 years. More than half of them stated that they had accompanied their child or explained the content of the screen. Almost all of the pediatricians (99.29%) reported that they restricted their children's screen use (Table 2).

Pediatricians were asked 10-point knowledge questions in line with the APA screen time recommendations, and the mean knowledge level of screen use was 7.73. Approximately 91% of the pediatricians answered more than 6 of the questions correctly. It was observed that 26.42% of the pediatricians answered 90% of the screen use knowledge level questions correctly (Table 3). There was no difference in the knowledge level of screen media use among pediatricians according to their gender ($p=0.668$). There was no difference between knowledge levels of screen use according to marital status and the number of children they had ($p=0.880$ and $p=0.491$, respectively). It was also determined that knowledge levels did not differ according to their titles ($p=0.231$).

There was a difference in the level of knowledge on screen use according to whether the spouse was a pediatrician or not ($p=0.001$). There was a difference between the institutions of employment in terms of screen use knowledge levels ($p=0.018$). The mean level of knowledge about media use among pediatricians working in state hospitals was 7.43, and the mean level of knowledge about media use among pediatricians working in university hospitals was 8.05, and the difference between these values was significant ($p=0.017$). At the same time, we determined that there was a significant difference between the mean knowledge level of screen use among pediatricians working in state hospitals and pediatricians working in their own clinics ($p=0.015$) (Table 4). There was a significant reverse correlation between pediatricians' knowledge of screen use and the average screen time of pediatricians and the duration of television programming when the child was at home ($p=0.035$ and $p=0.010$, respectively). There was a significant inverse correlation between the average screening time of pediatricians and the year of employment of the pediatrician ($p=0.007$). There was a significant relationship between the average screen time of the spouse, the time the television was on when the child was at home and the average screen time of the pediatrician ($p<0.001$ and $p=0.016$, respectively). A significant correlation was also found between the average screen time of the spouse and the time the television was on while the child was at home ($p=0.018$).

There was a significant relationship between the age of the pediatrician, the age of the spouse, the working years of the pediatrician and the duration of television

Table 2. Evaluation of screen-based media use		
Variables	n	%
What are your screen use habits at home?		
Social media	160	32.92
Film, series, competition program, etc.	147	30.25
Education	108	22.22
Game	55	11.32
I don't have except for my work life	16	3.29
Which screen-based technological devices do you have at home?		
Smartphone	210	27.60
Computer	198	26.02
Smart TV	181	23.78
Tablet	127	16.69
Game tool (PlayStation, Xbox, etc.)	45	5.91
What programs do you allow your child to watch on screen?		
Watching cartoons	163	41.79
Educational videos for children	110	28.21
Playing games	69	17.69
Adult programs	13	3.33
I do not allow my child to watch	35	8.97
What is your reason for allowing your child to spend time with screens?		
Making time for my own personal affairs	122	24.16
Entertainment	118	23.37
Calming down	64	12.67
Feeding food	63	12.48
Education	62	12.28
Accompanying other family members	41	8.12
I do not allow my child to spend time with screens	35	6.93
What is your habit of accompanying your child during screen media use?		
I will accompany him/her and be with him/her	81	30.45
I'll tell him/her the contents of the screen	68	25.56
I'll be with him/her as I watch him/her silently	61	22.93
I do not accompany my child	34	12.78
Other	22	8.27
What is your reason for limiting your child's screen use?		
Concern about delaying development	166	29.54
The young age of my child	136	24.20
Harmful content	135	24.02
Eye disease concern	103	18.33
Other	18	3.20
I do not restrict screen usage	4	0.71
What are the negative effects of screen use on children?		
Speech and language delay	210	22.29
Cognitive and sensory delay	200	21.23
Sleep disorders	200	21.23
Obesity	170	18.05
Skeletal and muscular system diseases	162	17.20

programming while the child was at home ($p<0.05$) (Table 5).

It was observed that 81.6% of pediatricians did not receive any training on screen use guidelines. However, 80.7% of the physicians wished to receive training on screen usage. In addition, 89.6% of the pediatricians were found to make suggestions to their patients regarding screening guidelines.

Variables	n	%
Children between 2 and 5 years of age can be allowed more than 1 hour of screen time per day, accompanied by their parents.		
Correct	69	32.5
Wrong	143	67.5
Children 6 years and older can use screens without parental supervision.		
Correct	24	11.3
Wrong	188	88.7
Children between 6 and 8 years old may be allowed more than 2 hours of screen time per day.		
Correct	55	25.9
Wrong	157	74.1
Children should not be given phones at mealtimes and before bedtime to calm them down.		
Correct	183	86.3
Wrong	29	13.7
Babies between 0-18 months may be allowed to video-chat with family members under parental supervision.		
Correct	143	86.3
Wrong	69	13.7
Children can be given mobile phones in the car or in crowded places.		
Correct	21	9.9
Wrong	191	90.1
Children aged 2-5 can watch educational cartoons.		
Correct	162	76.4
Wrong	50	23.6
Screen may be allowed when feeding children between 18-24 months.		
Correct	16	7.5
Wrong	196	92.5
Children between the ages of 4-5 can use screen time with their parents for a maximum of 1 hour per day.		
Correct	186	87.7
Wrong	26	12.3
The screen-based media is not recommended during the first 24 months.		
Correct	202	95.3
Wrong	10	4.7

Discussion

Screen media usage has become a common and serious problem among children. Screening time is associated with less energy expenditure, passive receptivity to the surrounding environment, and the possibility of encountering low-quality and inappropriate content (14). The health problems caused by screen exposure highlight the need for a guide on this issue, and more studies should be conducted (8,9). The place of screens in our lives has become widespread with the use of screens by adults both at work and on social media. According to data from the Turkish Statistical Institute for 2023, 95.5% of households had Internet access in Turkey, and the internet usage rate was 87.1% among individuals aged 16-74 (15). According to the European Children Online Project data for Turkey, the internet usage rate by parents was 23.5% for women and 49% for men (16).

Variables	Knowledge level				p-value
	Mean	SD	Median	Min.-Max.	
n=212					
Parental status					
Mother	7.77	1.46	8	3:10	0.668 ^a
Father	7.66	1.71	8	4:10	
Marital status					
Married	7.74	1.53	8	3:10	0.880 ^a
Single	7.58	1.93	8	4:10	
Number of children					
1	7.73	1.35	8	3:10	0.491 ^b
2	7.53	1.73	8	4:10	
>3	7.88	1.86	8	4:10	
Title					
Pediatric Resident	8.09	1.43	9	5:10	0.231 ^b
Pediatric Specialist	7.49	1.64	8	3:10	
Subspecialist	7.81	1.53	8	4:10	
Assistant Professor	8.22	1.39	8	6:10	
Assoc. and Prof.	7.55	1.29	8	6:10	
Spouse working status					
Yes	7.77	1.54	8	3:10	0.272 ^a
No	7.29	1.72	7	4:10	
Spouse being a pediatrician					
Yes	8.49	1.50	9	5:10	0.001^a
No	7.58	1.52	8	3:10	
Institution					
State hospital	7.43	1.59	8	3:10	0.018^b
University hospital	8.05	1.36	8	5:10	
Private hospital	7.78	1.76	8	4:10	
Clinic	8.78	1.39	9	6:10	

p<0.05 significance level, ^aMann-Whitney U test, ^bKruskal-Wallis H test
SD: Standard deviation, Min.-Max.: Minimum-maximum

Table 5. Comparison of screen use knowledge level of pediatricians according to demographic data

Variables (n=212)	Screen use knowledge level	Average screen time	Spouse's average screen time	Screen time when child is at home
Pediatrician's age	$r_s = -0.098$ $p = 0.156$	$r_s = -0.119$ $p = 0.085$	$r_s = -0.160$ $p = 0.020$	$r_s = 0.295$ $p \leq 0.001$
Age of spouse	$r_s = -0.081$ $p = 0.240$	$r_s = -0.107$ $p = 0.121$	$r_s = -0.059$ $p = 0.392$	$r_s = 0.228$ $p = 0.001$
Pediatrician's year of practice	$r_s = -0.074$ $p = 0.286$	$r_s = -0.185$ $p = 0.007$	$r_s = -0.110$ $p = 0.112$	$r_s = 0.246$ $p \leq 0.001$
Average screen time	$r_s = -0.145$ $p = 0.035$	-	-	-
Spouse's average screen time	$r_s = -0.113$ $p = 0.101$	$r_s = 0.604$ $p \leq 0.001$	-	-
TV time with child at home	$r_s = -0.176$ $p = 0.010$	$r_s = 0.166$ $p = 0.016$	$r_s = 0.162$ $p = 0.018$	-

$p < 0.05$ significance level, r_s Spearman correlation coefficient

In addition, successive disasters in our country (Coronavirus disease-2019, Kahramanmaraş earthquake) unfortunately revealed the reality of virtual education and necessarily increased children's screen time at home (17). Inappropriate or uncontrolled screen use can disrupt many important activities, such as spending interactive time with other family members, reading books, playing creative outdoor games, or engaging in physical activities, and constitutes time spent without activities that are important for early childhood development (18,19). This raises many questions about the negative consequences on the cognitive, social, and emotional development of children during early childhood (20). Considering the risks that occur before and the harms that occur after exposure, it is important for pediatricians to advise patients and their families regarding reliable and accurate information by adhering to screening guidelines. In the 2016 APA report, it was revealed that only 16% of pediatricians interviewed families about screen-related questions, and in the same report, 29% of parents reported that they trusted pediatricians for advice on media use (12). In our study, most pediatricians advised their patients about screening. However, when the international literature was reviewed, it was learned that in previous studies, pediatricians were not sufficiently supported in guiding and discussing these issues with the family about screen use in young children (21,22). Regardless of the age of the child, pediatricians should ask parents how much screen time their child spends, advise accordingly, and warn them about the consequences of excessive use (19).

In the study by Amos et al. (23), all 53 participants reported that they were aware of the existing screen time guidelines, and the majority reported moderate to excellent knowledge on these issues. A total of 43.4% of respondents reported that they had made screen time recommendations in the past 12 months and/or that they almost always planned and made these

recommendations during routine clinical visits (23). When we determined their level of knowledge with the questions we designed based on the guidelines, approximately 91% of pediatricians responded correctly to more than six out of ten questions, and 89.6% of pediatricians made recommendations to their patients about screening. In the same study, Canadian pediatricians mentioned behavioral problems, mental health concerns, obesity, and sedentary lifestyle concerns with increasing screen time. In a study by Costa et al. (24), television viewing in early childhood was found to be associated with overweight and the onset of obesity. In our study, pediatricians also reported that excessive screen use may have negative effects on language-speech, cognitive and sensory delays, sleep disorders, obesity, and skeletal-muscular system diseases (7). They had the same concerns as the other study.

Study Limitations

The fact that pediatricians who are aware of this issue participated in our study can be interpreted as an optimistic but weak aspect of our study. It cannot be generalized to the average knowledge level and average screening time of all pediatricians. Furthermore, we did not involve family physicians, general practitioners, and health professionals working in pediatrics, such as nurses, whose target patient population included children. We restricted our findings to pediatricians' screen knowledge level and time. Because we did not include another group, we were unable to make comparisons between groups.

Despite these limitations, this study has some strengths. We tried to raise awareness regarding this issue in pediatrics using data we obtained from pediatricians from every region, title, and institution. This is also the first study on this issue in the national literature that provides insight into the awareness of pediatricians in Turkey regarding current screening time guidelines and their practices.

Conclusion

This study found that pediatricians with preschool-aged children were knowledgeable about screen use. It is important for pediatricians to approach screening from a holistic perspective and integrate it into their practices.

Footnote

Ethics Committee Approval: Ethical approval was obtained from the Institutional Ethics Committee of the University of Health Sciences Turkey, Gazi Yasargil Training and Research Hospital (dated: 04.08.2023, approval no.: 491).

Informed Consent: Informed consent was obtained from all participants.

Authorship Contributions

Concept: S.G.B., M.T., Design: S.G.B., M.T., Data Collection or Processing: S.G.B., M.T., Analysis or Interpretation: S.G.B., M.T., Literature Search: S.G.B., M.T., Writing: S.G.B.

Conflict of Interest: No conflicts of interest were declared by the authors.

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