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Parents' Perceptions about the Mobile Technology Use of Preschool Aged Children

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Abstract

In the modern media world—22 years after the birth of the World Wide Web, 15 years after the launch of Google, 10 years after the first social networking site, eight years after the first YouTube video, six years after the first touch-screen smartphone, five years after the first "app" store, and two years after the iPad—children grow up alongside technology that changes at lightning speed. At only a few months old, babies are spending an hour a day watching television, and by two, children are begging to play with smartphones and tablet devices. An accurate understanding of the role of media in children's lives is essential for promoting healthy development. The purpose of this study was to investigate how parents of preschool-aged children use mobile technology and to explore parents' perceptions about that technology use. This study involved a general quantitative methodology and design. The sample included 85 parents from three preschools in Turkey. Results revealed prevalent smartphone use by preschoolers, generally not for educational purposes but for games, causing some concern for parents.

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1. Introduction

Today, various forms of communication media are widely and increasingly present in children's daily lives worldwide, especially mobile technologies such as smartphones, laptops, and tablets [1, 2, 3]. According to a Common Sense Media Research study, half (52%) of all children now have access to a newer mobile device at home: a smartphone (41%), a video iPod (21%), or an iPad or other tablet (8%) [4]. Chiong and Shuler [5] stated that 6% of two to five year old children have their own smartphone, and this percentage is rising dramatically in developed nations every year. Recent research on young children and technology shows a relationship that is

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sometimes positive, educational, and valuable and sometimes negative, restrictive, and threatening. A recent study on parents of young children by Plowman et al. utilized parental reports and observations to show that interactions with technology can support the four main areas of learning: acquiring operational skills, extending knowledge and understanding of the world, developing dispositions to learning, and understanding the role of technology in daily life [3]. In another study Plowman, McPake, and Stephen argued that children's health is endangered by sedentary use of technologies such as television, computers, and game consoles, leading to obesity, technology addiction, and further health risks [6].

The general purpose of this study was to consider how parents of preschool-aged children apply mobile technologies and to explore those parents' perceptions of this technology. The study asked the following research questions:

- For what purposes do preschool-aged children utilize their parents' smartphones?
- How frequently and for how long do preschool-aged children use their parents' smartphones?
- Which applications do parents install on their smartphones for their children?
- How do parents feel about their children's smartphone habits?

2. Design and Demographics of the Study

The sample of this study included 85 parents of preschool-aged children (3-6 years) from three preschools in Elazig, Turkey. The method applied to collect the data was a non-experimental survey with open-ended questions. The Scale of Mobile Technology Use at Home Survey, with 23 items providing quantitative data and five open-ended questions providing qualitative data, was administered to determine parents' perceptions about mobile technology use of preschool age children. Primarily mothers (76.47%) completed the survey. Most of the mothers (82.36%) were educated beyond high school, and, among these, 40% had a bachelor's degree, 8.24% had a master's degree, and 12.94% had a doctoral degree. While nearly 20% of the mothers were housewives, nearly half of them represented middle and upper class professions like medicine (7.05%), nursing (12.94%), academics (7.05%), and teaching (18.82%). The age range of the mothers was 26 to 48; the average age was 34.5 years old. In addition, most of the fathers (88.63%) had at least a college degree: 50.59% bachelor's, 5.88% master's, and 18.82% Ph.D. Most of the fathers worked in upper class professions like engineering, medicine, or academics. Fathers ranged in age from 27 and 50, with an average of 37. The children of the respondents were 40% female and 60% male, ranging in age from 3-6 (9.41% 3 years old, 37.65% 4 years old, 40.00% 5 years old, 11.76% 6 years old). Slightly more than half (51.76%) of the children attended a full-day preschool program; the others participated in the half-day program.

3. Findings

After establishing basic demographics, questions were asked to list what mobile devices and smart phones were in participants' homes. To make comparisons, preschool children's television watching time and parent's reading time with their children were also collected. Parents' positive and negative thoughts about their children's smartphone usage were asked via open-ended questions after determining children's smartphone usage choices, frequency, and duration, as well as applications installed for children on smartphones and for what purposes parents used smartphones.

3.1. Media in the Home

As shown in Table 1, almost all children (92%) have at least one TV, 100% have at least one computer, and 82.03% have a laptop or tablet in their homes. Nearly three-fourths (74.12%) of parents had one or more smartphones, with 51.77% having two or more, while none of the 3-6 year olds had their own smartphone. The

majority of the smartphones represented in this study were the iPhone 4 or 5 (32.59%) and the Samsung S3 or S4 (27.40%).

3.2. Amount and Frequency of Media Use

On a typical weekday, the largest group of parents (37.65%) reported that their child spent two hours watching TV, DVDs, or videos, compared to three-four hours on a typical weekend day (41.18%). In addition, the majority of parents remarked that reading and using a computer occupied an average of about half an hour a day. As shown in Table 2, the rate of reading with preschool children is lower than that for watching TV and spending time on the computer. Interestingly, preschool-aged children whose mothers are housewives spend more time watching television than children whose mothers are employed outside the home.

3.3. Usage Patterns of Smartphones by Parents and Preschool-Aged Children

Parents were first asked about their own use of smart phones and which applications (games, puzzles, videos) they had installed for their preschool-aged children, if any, as well as for what purposes and how often their preschool-aged children used smartphones. The most commonly performed activities by parents were making phone calls (13.17%), browsing the internet (10.58%), sending messages (10.37%), and taking or editing photos (10.15%). The majority of parents (70.31%) had installed apps for their children. As shown in Table 3, parents reported that their children used smartphones for playing games for both fun (28.86%) and learning (18.79%), plus for watching videos (20.13%). Table 4 shows the three most popular app categories: most applications (58.82%) are games for fun, while the others consist of educational applications (26.47%) and games for learning (14.70%). In this study, parents listed the most popular fun games for preschool children as Talking Tom (20%), Subway Surf, Fruit Ninja, Temple Run 2, Parking 3D, and Minecraft. The most popular educational applications were puzzles, math teaching applications, and storyteller applications, and the most popular games for learning purposes were Talking Ginger, Monkey Preschool, Where is My Water?, Human Body, Memory Match, Lego, and Chess.

As shown in Table 2, 60.78% of parents reported half an hour of child interaction with a smartphone on a typical weekday, comparable to a typical weekend day (58.82%). In addition, more than one in three children (31.37%) used smartphones for one or two hours each day, while a few children used smartphones 3-4 hours. The majority of parents allowed their children to use smartphones in the evening (82.35%). Preschool-aged children most commonly used the smartphone in the home (60.98%) or on long trips (15.85%). Furthermore, some parents mentioned using smartphones to persuade their child to eat at meal times.

3.4. *Parental Concerns about Preschool Children Smartphone Use*

To seek answers to the last research question of the study, four questions were asked of the parents, including three open-ended questions. The initial question was about parental feelings on smartphone use by preschool children. Parents were divided about letting their children use their smartphones, with 46.88% feeling negative, 26.56% feeling positive, and 26.88% feeling neutral. In the second question, parents were asked to make a statement in support of their thoughts on the first question. A content analysis study was performed according to the responses, and qualitative codes and frequencies were obtained. Parents indicating a positive opinion explained benefits such as improvement of children's motor and cognitive skills, adaptation to technology, and improvement of visual memory. Parents with negative opinions mentioned how smartphone usage can cause physical or mental problems in the future: they fear that their children will be introverted, have an isolated life, or be affected by harmful radiation. Ultimately, because smart phones are expensive and fragile devices, many parents are not comfortable with their children using them.

4. Discussion

This study surveyed a representative sample of 85 Turkish parents of children between three and six years old to gather their perceptions about the mobile technology use of preschool-aged children. The majority of the data obtained in this study reflects the views of mothers, as they were the primary participants. One of the main findings of the study is that TV continues to dominate children's media use. Children spend twice as much time watching TV and videos as they do reading books. A second key finding is that preschool-aged children's total screen media time reaches about 3 hours a day when including use of televisions, laptops, tablets, and smartphones, which is quite high. However, as these children exist in technologically rich environments, high total screen media time is an inevitable result. Furthermore, in the sample of this study, parents rarely read books with their children, despite high socio-economic and educational levels. These key findings parallel two recent studies on a similar age group in America [4, 7].

Investigating preschool-aged children's usage of their parents' smartphones and the parents' opinions about the subject has revealed interesting results. Most parents have more games for entertainment purposes than for learning. Therefore, it can be said that parents use their smartphones as a distraction or discipline tool or as a reward. Although some parents displayed negative thoughts about the usage of smart phones by preschool children, they did not report taking any preventive measures. Many parents believed that smartphones may cause health problems for their children or adversely affect their improvement. In addition, families worried about resulting isolation from society and loneliness. On the other hand, some parents shared positive opinions, explaining how children's usage of these devices is an inevitable consequence of digital life. Unfortunately, few parents provided satisfying answers to support their perceptions, whether positive or negative. Many parents did express fears about radiation exposure from smartphones and gave the impression that if this condition were removed, their remaining negative thoughts would be minimal.

Several studies in the literature indicate that with appropriate use of today's digital technology, preschool children's cognitive and social skills can be enhanced [8-11]. Playing games is extremely important for children's learning; smartphones and other mobile technologies offer impressive game environments for today's digitally minded kids. Play aided by technology draws from more traditional methods of play, stirring the imagination and teaching children to follow rules. Once children are accustomed to the technology, they are able to make changes to it, affecting their play outcomes and making connections to real life.

Ultimately, adults must ensure that technology and related tools such as smartphones and tablets cause no harm to children. Technology and media tools should not take precedence over physical, developmental activities or social relationships with peers, family members, or teachers. Applications of technology and media should never be degrading, dangerous, exploitative, or intimidating to children, nor should it threaten their well-being. Furthermore, technology should not subrogate creativity, real-life discoveries, physical activities, reading books, or communicating with others. Media should be used to explore the digital world in which we live to support children's learning, as the digital world will remain indispensable throughout children's educational lives and futures.

APPENDIX-Study Related Tables

Table 1. Percentage of Technology Home Access/Ownership Among Children Ages 3-6

Item	%
TV	92
Desktop Computer	17.97
Laptop	50.78
Tablet	31.25
Smartphone	74.12

Table 2. Time Spent Watching Screen Media

Time	*Watching TV, DVDs, or Videos*				*Interacting with smartphone*				*Reading/being read to*		*Using desktop, laptop, or tablet computer*	
	Weekday		*Weekend*		*Weekday*		*Weekend*					
	N	%	N	%	N	%	N	%	N	%	N	%
0 hours	1	1.18	0	0.00	4	7.84	2	3.92	15	17.65	25	29.41
Less than 1 hour	3	3.53	2	2.35	**31**	**60.78**	**30**	**58.82**	**64**	**75.29**	**30**	**35.29**
1 hour	26	30.59	9	10.59	12	23.53	11	21.57	6	7.06	15	17.65
2 hour	**32**	**37.65**	25	29.41	4	7.84	5	9.80	0	0	11	12.94
3-4 hours	22	25.88	**35**	**41.18**	0	0.00	3	5.88	0	**0**	4	4.71
5 or more hours	1	1.18	14	16.47	0	0.00	0	0.00	0	0	0	0

Table 3. Preschool Children's Activities on Their Parents' Smartphones

Activity	**N**	**%**
Videos	30	20.13
Movies	13	8.72
Videos you made	7	4.70
Photos you take	13	8.72
Music	6	4.03
Talking on phone	7	4.70
Games for fun	**43**	**28.86**
Games for learning	28	18.79
Other	2	1.34

Table 4. Popular App Categories for Children as Reported by Parents

Category	**N**	**%**
Educational App	27	26.47
Games for Fun	**60**	**58.82**
Games for Learning	15	14.70

Table 5. Preschooler Use of Smartphones According to Adult Supervision

Frequency	**Supervision**		**Non-Supervision**	
	N	%	N	%
Never	7	10.94	6	10.53
Rarely	**31**	**48.44**	**23**	**40.35**
Sometimes	16	25.00	17	29.82
Often	9	14.06	7	12.28
Always	1	1.56	4	7.02

Table 6. Parental Concerns about Smartphone Use by Preschool Children

Positive Feelings		Negative Feelings	
Qualitative Code	f	Qualitative Code	f
Development of motor skills	9	Radiation problem	15
Development of cognitive skills	6	Not suitable for preschool children	14
Adaptation of technology	5	Negative effects on child development	9
Useful tool for learning	4	Health hazard	8
Development of visual memory	4	Contributes to introversion	4
Development of eye-hand coordination	3	Expensive and fragile device	1

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