

**MOTHERS' KNOWLEDGE AND PRACTICE REGARDING  
ELECTRONIC MEDIA USED BY THEIR CHILDREN****Narges F. Mohamed<sup>1</sup>, Sahar M. Soliman<sup>2</sup>, Samia M. Abd El-Mouty<sup>3</sup>**<sup>1</sup>*Demonstrator, Community Health Nursing department, Faculty of Nursing,  
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Mansoura University, Egypt***Abstract:**

**Background:** Electronic media invade the world of young children in an unrestricted way. Positive and negative long-term consequences have been revealed on development, physical, and psychosocial milestone. However, no clear figure is available for developing countries on electronic media used by children under five years. Consequently, it is important to increase mothers' awareness of the proper usage of electronic media with their children. Study aimed to assess mothers' knowledge and practice regarding electronic media used by their children. A descriptive cross-sectional design was utilized in this study. This study was conducted at 22 primary health care facilities affiliated to directorate of Health and Population in Mansoura city including health offices, family health centers, and primary health care units. A convenient sample of 421 of children under five years with excluding children with special needs. Five tools were developed by the researcher for collecting of data to assess; socio-demographic and economic characteristics of mothers and their children, knowledge, practice and attitude of mothers regarding electronic media. Results: study results revealed that 34.4% of the studied mothers had secondary education, 54.2 % of them lived in rural areas and 60.6% of them were housewives. 58.4% of the studied children's age ranged from two to less than five years with mean 28.831(13.88) months. Almost all of the studied children used Television. 85.3 % of them spent more than two using various electronic media devices daily with a mean 4.520(2.494) hours and 44.7% of them had decreased sleep duration. 88.8% of the studied mothers spent more than two using various electronic media devices daily with a mean 4.532(1.965). 82.9% of them had poor level of knowledge regarding electronic media. All of them had improper practice regarding electronic media. Conclusion: It is necessary to improve mothers' knowledge and practice regarding electronic media for enhancing healthy life for their children. Finally, it is recommended that continuous health education program and training courses regarding electronic media.

**Key words:** Electronic Media, Children, under five years, Mothers

Parents complain, young children cry, it has become recently a common phenomenon when talking about electronic media usage. These devices embedded in and dominate everyone's lives, especially children under the age of five years in uncontrolled way (1, 2).

During the previous four decade, the daily activities of family have been occupied with traditional media such as television and radio. However with the advent of mobile devices (tablets and smartphones) nowadays, the way of communication, exchanging information and finding entertainment has changed

(3, 4). Regardless of the family's economic or social status, the use of mobile and touch screen devices has become present everywhere and across all social classes. Children begin of increasing to use these devices at ever younger ages(5). But until now there no accurate statistics is available for on electronic media used by children under five years in developing countries including Egypt(6, 7).

Mobile devices are undoubtedly attractive as they are easy to carry, and use. Also, they help parents keep their children busy when they need to complete tasks and have a break from long energetically day. They can access numerous entertainment and information sources at relatively low costs (8, 9).

For better or worse, the impact of technology on adults' life is continuously increasing and young children are becoming an integral part of this reality. Young children can learn reading, language through playing or getting entertained with appropriately designed programs or interactive media but they require guidance and interaction with adults (10, 11).

On the other hand, Screen exposure has negative consequences for children. Most of these consequences represented in unhealthy habits and obesity, reduced sleep hours, the potential for poor social interaction skills, inappropriate behavioral traits, and exposure to improper content (12,13,14,15). Also, it is important to take into account that children spend less time doing alternative healthy activities, such as doing outdoor activities, narrating books for them by their parents and establishing interpersonal relationships(16,17)

It is interesting to focus on early childhood before children begin to use

electronic media, because this is a period of great flexibility in the brain in which their experiences have vital influences on social, cognitive, and emotional development and develop habits associated to media use for future life such as eating, sleeping, and doing physical activity(18). Also at this age, mothers play a crucial role in children's relationship with the electronic media. Therefore, it is important to continually improve mothers' knowledge and childcare practices(19).

Consequently, there are regulations and recommendations to guide parents in relation to screen use among young children have been disseminated by international organizations in developed countries (20, 21, 22) but no similar approach in this age group has been found in Egypt.

So, community health nurse involvement in certain areas as primary health care setting is necessary to unique access to large numbers of young children's mothers for communicating these recommendations, as well as ensuring on the healthy alternatives for screen activities(19).

#### **Aim of the Study**

To assess mothers' knowledge, practice regarding electronic media used by their children

#### **Method**

##### **Design**

A descriptive cross sectional design was utilized in this study.

##### **Setting**

The study was carried out at 22 primary health care facilities(PHC) affiliated to directorate of Health and Population in Mansoura city. These primary healthcare facilities were selected according to their population density.

**Participants**

A convenient sample of 421 mothers of children under five years from both genders, while excluding children with special needs.

The sample size of children under five years was calculated according to Schaeffer et al., 1990 in which the required sample size was 421 child under five years after adding 10% for non-responders, when the population size was 100962 children who were registered at the primary healthcare (PHC) facilities of Mansoura districts, the desired precision= 5%, expected frequency of correct knowledge about electronic media use by children under five years =50% and design effect= 1 at confidence level = 95%.

**Tools for Data Collection**

After reviewing the relevant literature, five tools were used in this study. One tool was modified by El-Gilany, El-Wehady & El-Wasify (2012), and four tools were developed by the researcher for data collection as the following.

**Tool (I): Socio-economic Scale.**

It was adopted from Fahmy and El-Sherbini socio-economic scale 1983, which was modified by El-Gilany, El-Wehady & El-Wasify (2012). This scale was used to assess the socio-economic characteristics of studied mothers as indicated in the following table:

**Table (A) The socio-economic level scores**

Socio-economic level	Percentile
Very low	0-21
Low	22-42
Moderate	43-63
High	64-84

**Tool II: Structured interview assessment questionnaire.** This tool was used to assess the characteristics of

children under-five years which consisted of six questions such as age, gender, order between their siblings, child nature. The questions from (1-4) were open-ended questions that required open answers. The question (5, 6) was multiple response questions.

**Tool III: Structured interview questionnaire to assess mothers' knowledge regarding electronic media.** This tool was used to assess mothers' knowledge regarding electronic media as, meaning, types, benefits, health risks, the recommendation for healthy use of electronic media, and the developmentally healthy activities instead of engaging in digital play.

This tool was classified into 11 categories; all these categories were composed of 111 questions and the question's answer choices included "Yes", "No". One mark awarded for each correct answer.

**Scoring system.** The total score of knowledge ranged from 0 to 111. According to the researcher's cut of point, the knowledge level was categorized into three levels as:

*Poor.* Scores less than 50% of total scores (less than 55.5).

*Fair.* Scores 50% to less than 75% of total scores (55.5 to less than 83.25).

*Good.* Scores more than 75% of total scores (83.25 and more).

**Tool IV: Structured interview questionnaire to assess mothers' practice regarding to electronic media.** It consists of five parts as the following.

**Part (I).** To assess home media access through four open questions including number, place of media devices in the home, and the accessibility of the internet to these devices.

**Part (II).** To assess media devices used by children through five open questions including the child's age of beginning media devices usage, the person shared with the child media devices usage, the duration of using media devices by the child either alone or shared with others, and eight closed questions such as the distance between media devices and the child's sitting place, the actual effect of using electronic media on the child.

**Part (III).** To assess mothers' practice related to their usage of electronic media. This tool was assessed by seven open questions including the duration of using various media devices and their uses.

**Part (IV).** To assess mothers' practice related to electronic media used by their children. This tool consisted of two sections. The first section was classified into nine categories which were assessed by questions requiring a response on a 4-point Likert-rating scale with 4 continuums with the following grades for a negative response (No=3, sometimes=2, often=1, always=0). Except the ninth category requiring a response "Yes", "No". One mark was awarded for each correct answer.

**Part (V).** To assess mothers' practice related to healthy developmental activities. It was classified into three categories. One mark was awarded for each correct answer.

**Scoring System.** The total score of practice ranged from 0 to 233. According to the researcher's cut of point, the subjective practice consisted of two levels as:

**Improper.** Scores less than 75% of total scores (less than 174.75)

**Proper.** Scores more than 75% of total scores (174.75 and more)

**Tool V: Structured interview questionnaire to assess mothers' attitude regarding electronic media.** Likert scale was used to assess mothers' attitude on electronic media such as the importance of using electronic, expected consequences from over-usage of electronic media, etc...).

This tool consisted of 18 statements requiring a response on a three-point Likert-rating scale with three continuums (Agree, Disagree, and Neutral). A scoring system was used to quantify the mothers' attitude; two marks to agree, one mark to disagree, and zero mark to neutral. If the statements were negative, the scoring system was reversed in Statistical Product and Service Solutions (SPSS) program whereas one mark was given to agree and two marks to disagree and zero mark to neutral that made up a total score of 36 marks as the following:-

*Positive attitude* (It includes 9 items = 18 marks)

*Negative attitude* (It includes 9 items = 18 marks)

#### **Procedure**

##### **Preparatory phase.**

**Administrative stage.** Official approval was issued from the dean of Faculty of Nursing- Mansoura University and the vice dean for higher graduate studies was submitted to Ministry of Health and Population (MOHP) Directorate to obtain approval for conducting the study at the selected primary healthcare facilities.

**Ethical consideration.** Approval was obtained from the Faculty of Nursing Research Ethics Committee. Oral approval from the participants during the initial data collection. The researcher introduced herself and a simple explanation about the objectives

of the study given to them. They assured that their participation in the study was voluntary and the collected data treated confidentially and only used for the study. Participants were informed that they have the right to withdraw at any time from the study without giving any reason.

**Literature review.** Review of national and international literatures on the various aspects of electronic media used by children under five years were proposed from scientific published articles, internet searches, and textbooks. This review was a guide for developing the study tools.

**Developing the study tools.** Tools of data collection from the second to the fifth tool were developed by the researcher supported by reviewing the relevant literatures.

**Content validity.** The study tools were tested for content validity by five experts in the field of community health nursing and the required modifications were carried out.

**Face validity.** It was carried out by conducting a pilot study on 10 % of the study participants (42 mothers of under-five children) were selected conveniently from the same settings and excluded from the study sample. The required modifications were done. This pilot study aimed to check the appropriateness and clarity of the questionnaire and identify any unexpected obstacles in data collection.

**Applicability.**To test applicability for tools and the required modification were carried out. Internal consistency was tested by Cronbach's coefficient alpha for knowledge, attitude, and practice items, which the results were as the following:

**Table (B) The applicability for tools tested by Cronbach's coefficient alpha**

Tool	Cronbach's Alpha
Mothers' knowledge tool	0.884
Mothers' practice tool	0.894
Attitude scale	0.892

**Operational phase.** This phase started from the beginning of August 2019 and ended in September 2020. This phase consisted of the following steps:

**Initial data collection.** Each mother of children under five years was interviewed individually. The researcher introduced herself and explained the purpose and method of the study. Each interview consumed about (25-30 minutes) to complete filling the study tools that depended on the understanding and responses of the mothers. Twelve weeks were spent on data collection.

The researcher used data collection tools to assess mothers and their children's socio-demographic and economic characteristics, mothers' knowledge, practice, and attitude regarding electronic media (**Tools I, II, III, IV, and V**).

**Data analysis.** Data was sorted, coded, organized, categorized and then transferred into especially designed formats. Data was analyzed using SPSS[Stands for Statistical Product and Service Solutions] version 20/International Business Machines/IBM. Com, U.S.A and were presented by simple frequency tables. Mean and standard deviation for continuous variables and percentages for categorical variables.

**Limitations of the Study**

Although our results are meaningful, they must be explained in the context of some limitations represented in :

Firstly, this is a cross-sectional study that limits its ability to infer the direction of causality. Secondly, several

answers to media use based on participants' memory, not on objective measurements, which include recall bias and not be reliable; however, the question on screen time focused on a day before the interview in an effort to increase reliability.

Future studies should use various objective media use measurement techniques such as media use diaries, observation, or device tracking methods for more accurate tracking of type of content, length of exposure, and conditions under which children use electronic media. A longitudinal design would be preferable to thoroughly understand the influence of parental screen time on children's screen time and depth clarification of the effect of various media devices on children under five years.

### **Results**

Table (1) represents the socio-demographic and economic characteristics of the mothers. Regarding age, 68.4% of the studied mothers were in the age group from 20 to less than 30 years with a mean of 25.843(5.286) years. It was observed that 34.4% of them had Secondary education, while 33.7% of them had bachelor's degrees. Concerning residence, 54.2 % of them were living in rural areas and 60.6% of them were housewives. It was observed that 41.1% of them had enough monthly income for emergency situations and 74.3% were located in middle socioeconomic status.

Table (2) shows the characteristics of children under five years. It clarified that 76.2% of the studied mothers had one child under five years with a mean 1.245 (.447). It was observed that 58.4% of studied children, their

ages ranged from two to less than five years with mean 28.831(13.880) months and 51.5 % of them are boys. It was noticed that 35.9 % of them are the firstborn, while 31.8 % of are the second. As regard child behavior, 64.4 % of them were active and 57% of them received daycare at home.

Table (3) reveals mothers' descriptions regarding media devices used by the child. It was observed that 97.1% of the studied children under two years used TV, 49.7% out of them began to use TV at less than six months while 42.3 % out of them began to use it from six to 12 months. It was observed that 41.7% of them spent 60 - 120 with a mean 124.543(94.489) as a total duration spent on TV. Moreover, 99.2% of the studied children from two to under five years used TV, and 45.9 % out of them began to use it at six to 12 months. It was noticed that 54.5 % of them consumed  $\geq 120$  mins with a mean 150.488(89.335) mins as a total duration spent on TV. It was observed that 5.1% of the studied children under two years used computer, 3.4% out of them began to use it at 12 - 18 months. According to their total duration of using it, 3.4% of them spent - 60 mins with a mean 2.571(12.104). Whereas 19.5% of the studied children from two to under five years used computer, 16.6% out of them began to use it at 18  $\geq$  24 months. According to their total duration of using it, 10.9% of them spent - 60 mins with a mean 15.813 (55.580) mins. Regarding children using tablets, 23.4% of the studied children under two years used it, 17.1% out of them began to use it at

6 • 12. It was recognized that only 13.7% of them consumed 60 • 120 mins with a mean 21.286(45.260) as a total duration spent on tablets. Also, 23.2%, the studied children from two to under five years used it, only 8.9 % out of them began to use it at 12 • 18 months. It was identified that 10.9%, of them spent 60 • 120 mins with a mean 25.874 (53.365) mins as a total duration spent on tablets. Regarding children using smartphones, 64.6% of the studied children under two years used it, 32.6% out of them began to use it at 6 • 12 months. As regards their total duration of using it, 29.1% of them spent 60 • 120 mins with a mean 127.963(99.366). Moreover, 84.55%, the studied children from two to under five years used it, 43.1% out of them began to use it at 12 • 18 months. As regards their total duration of smartphones, 46.3% of them spent  $\geq 120$  mins with a mean 54.086(61.818).

Table (4) shows mothers' descriptions regarding the total duration of the actual effect of using electronic media on the child. It was noticed that 85.3 % of the studied children spent two hours and more using various electronic media devices daily with a mean 4.520(2.494) hours. It was recognized that 44.7% of them had decreased sleep duration, 24.7 % of them had nightmares, 27.1%, 27.6% of them become violent personality and their attention decreased respectively.

Table (5) shows that 34.4% of the studied mothers spent on using TV 1.5 hrs < 3hrs with a mean 127.815(77.828) mins, 25.9% of them spent on using the computer 0.5hr • 2hrs with a mean 41.378(59.824) mins and

62.9% of them spent on using smartphones  $\geq 1$ hrs with a mean 92.672(47.654)mins. Also, it was noticed that 16.1% of them did not use tablets. The majority (88.8) of them spent  $\geq 2$  hrs as a total duration of various media devices with a mean 4.532(1.965) hours. Concerning mothers' activities on electronic media, it was observed that 74.1% of the studied mothers used TV, 21.6% of them used the computer for watching series, work completion, respectively. Also, it was observed that 96.4% and 78.6% of them used portable devices (tablets, smartphones) for conducting social communication, online searching, respectively.

Table (6) elicits knowledge score levels of mothers regarding electronic media used by children under five years. It showed that 82.9% of studied mothers had a poor level of knowledge regarding electronic media used by children under five years with a mean 1.194 (.452).

Table (7) represents that 99.8% of studied mothers had improper practice regarding electronic media used by their children under five years with a mean 1.002 (.0487).

#### Discussion

Electronic media devices found their way to children especially aged under five years. The improper viewing behaviors become the most common children's habit nowadays (23, 24). These early sedentary life behaviors could persist across age accompanied by adverse screen-related consequences. So, providing appropriate knowledge and safe practice to mothers for healthy use of screens (25,26).

The results of this study can be summarized as follows. The current

study revealed that more than two thirds of the studied mothers aged from 20 to less than 30 years, and the age of them ranged from 16 to 45 years with a mean of 25.843(5.286) years. This finding at the same line with the results of Egyptian study (27)found that the age of the mothers ranged from 23 to 37 years old with a mean of 26.27(4.49) years. While, the findings of American study (28)indicated that the maternal age ranged from 23 to 53 years with a mean 36 years when studied the parental perceptions of the role of media and technology in their young children's lives.

In relation to mothers' educational level, the current study showed that one third of the studied mothers graduated from secondary schools and university. These findings were in an agreement with the findings of American study (29) indicated that one third of the mothers graduated from college and secondary schools. While the findings of Australian study(30)revealed that more than half of the studied mothers graduated from technical schools.

According to mothers' residence, half of the studied mothers lived in rural areas. In contrast, slightly less than three fourths of families lived in urban areas, this finding reported by Lebanon study (8).In the current study, two thirds of studied mothers were housewives. While the results of American study (31) found that more than three fourths of mothers did not work. Furthermore, the findings of Australia study (32) indicated that half of the studied mothers were unemployed. Whereas the results of Australian study(30)found that more than half of mothers were working.

In the current study, less than half of the studied mothers had an adequate income per month. This finding disagreed

with results of American study (33) presented that approximately half of families considered as low income per month. For socioeconomic level in the current study, about three fourths of the studied mothers were from the middle class. This finding was in the same range as the findings of two American studies (34,35)revealed that most of the families were from the middle class.

The current study revealed that three fourths of the studied mothers had one child under five years. When, about half of the studied mothers had only one child below five years, this finding reported by American and Canadian studies (15,36)

In the current study, the mean age of the studied children was 28.831(13.880) months ranged from six to 57 months with more than half of them aged from two to under five years. While findings of Argentine study(3) mentioned that the mean age of the studied children was 30.5 (14.29) months ranged six to 59 months, and two thirds of them aged from two to five years. Moreover, Egyptian study results(27)clarified that the mean age of the studied children was 2.05 (0.56) ranged from one to six years.

Concerning children's gender, the current study illustrated that half of the studied children were boys. This finding was in the same line with the result has been previously reported that half of the studied children were boys in the Finnish and Mexican American studies (37, 38). In contrast with the results of Australia study (32) found that half of the studied children were girls.

The current study determined that slightly more than one third of the studied children are the firstborn. This finding in the same range as the result of a British study(39) reported that one third

of the studied children are the firstborn. As regard child nature, the current study mentioned that slightly less than two thirds of the studied children were active. While American study results(40) clarified that the majority of the studied children were energetic

Concerning the type of child daycare, the current study indicated that more than half of the studied children cared for by their mothers at homes. While more than one third of the studied children stayed at home with their parents reported in results of two Canadian studies (36, 41)

Concerning mothers' description of media devices used by children; the current study indicated that almost all the studied children aged under two years and two to under five years exposed and used TV. This finding was consistent with the American and Chinese studies result(34,42) have been previously reported that most of the studied children exposed and used TV.

The current study revealed that half of the studied children under two years began exposure to TV at below six months. This finding was in the same range as the findings of American study (16) clarified that the children begin interacting with TV from four to six months old. Also, nearly half of the studied children aged two to under five years were introduced to TV at six to 12 months. This finding was in agreement with American study results (43) indicated that about two thirds of the studied children were exposed before 24 months to TV.

The current study showed that one third of the studied children aged two to under five years spent more than 120 minutes on watching TV with mean 150.488(89.335) minutes. This finding was in agreement with the findings of

Korean study (44) reported that one third of the studied toddlers spent more than two hours watching TV. Also, the result of a British study (45) found that around two thirds of the studied children spent two or more hours per day watching TV when studied parental TV viewing, parental self-efficacy, media equipment, and TV viewing among preschool children.

Based on the result of the current study, less than one fourth of the studied children aged under two years began to use the tablets and one third of them were introduced to smartphones at six to 12 months. This finding was similar to the results of American study(46) indicated that nearly half of the children were introduced to mobile phones or tablets before 18 months of age, typically starting between seven and 18 months. In addition, about half of the studied children aged two to under five years were exposed firstly to smart devices at 12- 18 months. This finding was quite similar to the findings of Korean study (47) mentioned that most children began using smart devices at 12–24 months.

The current study showed that only (13.7%) of the studied children aged under two years exposed to tablets and more than one fourth of them used smartphones for 60 minutes to 120 minutes daily for each device. Although, the average tablets, smartphones usage of children was 24.44 minutes, 48 minutes, respectively this finding reported in American, British studies (5,48)

Moreover, only (10.9%) of the studied children aged between two to five years used tablets and less than half of them used smartphones for less than 60 minutes to more than 120 minutes daily for each device. However, this finding was inconsistent with the results

of an Australian study (49) clarified that touch screen tablets were being used by less than two thirds of children and mobile phones by less than half of them for on average 20 minutes and 10 minutes per day respectively. Also, the findings of British study (50) indicated that the children used tablets for an average of 79 minutes a day.

The current study revealed that only (5%) of the studied children aged under two years and about one fourth of them aged between two to five years used computers. This finding was quite similar to the result has been previously pointed that nearly only (9%) of children under two and about one fourth of them aged two to three engaged in computer use in the studies conducted by American, Singaporean studies (5,51). Moreover, only (16%) children aged between two to five years firstly interacted with computers at 18 months. On the contrary, the results of a British study (48) found that only (11%) the studied toddler began using computers at 36- 47 months.

The current study clarified that only (3.4%) of the studied children aged under two years were exposed to computers for less than 60 minutes with mean 2.571(12.104) minutes per day. This finding was in the same range as the results of Singaporean study (2) found that only (5%) of the studied children exposed to computers for less than 2 hours per day. Also, only (10.9%) of the studied children aged between two to five years used computers for less than 60 minutes with mean 25.874 (53.365) minutes per day. This finding was in the line with results of Australian study (49) determined that young children spent the least amount of their time using laptop and desktop computers for less than 5 minutes per day.

In the current study, the majority of the studied children spent more than 2 hours as a total screen time was with mean 4.520(2.494) hours daily. This finding agreed with Australian study (52) findings reported that children aged between 1-4 years exceeded the maximum screen time than recommended by the Australian Department of Health. In contrast, this finding was inconsistent with Canadian study (53) results indicated that about half of the children spent less than 1 hour as total daily screen time with mean 74.8 (56.9) minutes when studied the associations between factors within the home setting and screen time among children aged 0-5 years.

The current study indicated that slightly less than half of the studied children who used media devices for more than two hours per day experienced a decrease in sleep duration. This finding was in agreement with the result has been previously reported that media use has often been associated with insufficient sleep in children where the more increasing in screen time more than two hours, the shortened in total sleep time, and delay bedtime in three American, Thai studies (54, 55, 56, 57)

In accordance mothers' description regarding their usage of electronic media; based on the result of the current study, the majority of the studied mothers used various electronic media devices for more than two hours daily with a mean of 4.532(1.965) hours. This finding was quite similar to the results of American study (28) found that mothers spent an average of 6.55 hours per day on various technologies devices.

In the current study, one fourth of the studied mothers used computers for completing their work tasks, and only (14%) of them watched entertainment

programs. While the findings of Chinese study (58) indicated that about two thirds of mothers used computers for entertainment, searching homework answers and other information.

The current study indicated that most of the studied mothers engaged in social communication and more than three fourth of them searched online for information by using portable devices. This finding was in the same range as an Australian study (49) findings stated that two thirds of parents used mobile devices for searching for the information on Google and engaging with online social.

According to mothers' score level of knowledge about potential risks of electronic media use, the current study revealed that the majority of the studied mothers had poor knowledge. This finding was supported by the result has been previously pointed that little was known for parents about the effects of electronic media on various aspect of their children health in the studies conducted by two American studies (7,59).

Concerning mothers' score level of knowledge about the recommendations for healthy use of electronic media, the current study showed that three fourths of the studied mothers had poor knowledge. This finding was similar to Egyptian study results (27) found that slightly more than three fourths of mothers didn't know the recommendation for safety screen media exposure for young children. Furthermore, American study results (59) found that most of the mothers weren't aware of the recommendations about safety screen media.

Based on the result of the current study, the majority of the studied mothers had a poor level of knowledge about electronic media used by children

under five years. This finding was in accordance with Turkish study findings (60) indicated that the parents had limited knowledge regarding the use of old and new electronic media devices.

In relation to mothers' score level practice about applying parental mediation strategies, the current study mentioned that most of the studied mothers can't establish rules for their children screen time. This finding was consistent with the results of European, Russian studies (61,62) clarified that parents set rules but didn't apply them. They might have to use media devices to calm and occupying their children during finishing their home duties. Also, they used them to control their children behavior as an encouragement or punishment.

#### **Conclusion**

The study concluded that; most of the studied mothers had poor level of knowledge about electronic media. Also, it found that mothers' practices regarding to using electronic media are improper. Their children exceed the recommended instructions for appropriate using electronic media.

#### **Recommendations**

Based on the findings of the study, this study would wish to make the following recommendations:

1. Encourage the continuation and expansion of education programs about appropriate usage of electronic media and healthy developmental activities for mothers whose children under five years. These educational program may be applied through face-to-face sessions in outpatient clinics in hospitals, maternal child health centers or through web-based sites.
2. Family interventions through scheduled home visits that aim to

control the screen media and reduce the screen time of parents and children together could be more beneficial to children than those aimed solely on children

3. Posit the appropriate recommendation for usage electronic media and alternative activities through feasible online applications to parents.
4. The mass media should develop strategies that will help parents

change their own technology use behaviors or educate parents about the benefits and consequence of various types of technology use in order to influence young children's screen time.

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**Table 1:** Socio-demographic and economic characteristics of mothers(n=421)

Item	n	%
<b>Age</b>		
Less than 20 years	56	13.3
From 20 to less than 30 years	288	68.4
From 30 to less than 40 years	71	16.9
From 40 to less than 50 years	6	1.4
Mean (SD)	25.843(5.286)	
<b>Education</b>		
Read and write	15	3.6
Basic education	27	6.4
Secondary education	145	34.4
Intermediate education	47	11.2
Bachelor's degree	142	33.7
Postgraduate degree	45	10.7
<b>Residence</b>		
Rural	228	54.2
Urban	193	45.8
<b>Occupation</b>		
Housewife	255	60.6
Worker	14	3.3
Clerk	152	36.1
<b>Income/Month</b>		
In debt	2	.5
Routine	111	26.4
Emergency	173	41.1
Save	135	32.1
<b>Socioeconomic level</b>		
Low socio-economic level	57	13.5
Middle socio-economic level	313	74.3
High socio-economic level	51	12.1

**MOTHERS' KNOWLEDGE AND PRACTICE REGARDING etc...**

**Table 2: Characteristics of children under five years (n=421)**

Item	n	%
<b>Number of children under five:</b>		
One child	321	76.2
Two children	97	23.0
Three children and more	3	.7
<b>Mean (SD)</b>	<b>1.245(.447)</b>	
<b>Age:</b>		
Less than 2 years	175	41.6
2 years to less than 5 years	246	58.4
<b>Mean (SD)</b>	<b>28.831(13.880)</b>	
<b>Gender:</b>		
Boy	217	51.5
Girl	204	48.5
<b>Child ranking:</b>		
First child	151	35.9
Second child	134	31.8
Third child	88	20.9
Forth child and more	48	11.4
<b>Child behavior:</b>		
Non-social (Calm, Awkward)	150	35.6
Active (Impulsive, Curious)	271	64.4
<b>Type of child daycare</b>		
At nursery	181	43.0
At home	240	57.0



**MOTHERS' KNOWLEDGE AND PRACTICEREGARDING etc...**

**Table 4: Mothers' description regarding the total duration of the actual effect of using electronic media on the child (n=421)**

Item	< 2 hrs		≥2 hrs	
	n	%	n	%
<b>Total screen time</b>	62	14.7	359	85.3
<b>Mean (SD)</b>	<b>4.520(2.494)</b>			
<b>Actual effect of using electronic media on the child</b>				
Decreased sleep duration	16	3.8	188	44.7
Sleep disturbance (Nightmares)	5	1.2	104	24.7
Become violent personality	10	2.4	114	27.1
Decreased level of attention	7	1.7	116	27.6

**Table 5: Mothers' descriptions regarding their usage of electronic media (n=421)**

Item		n	%
<b>Times spent by mothers on media devices</b>			
<b>TV</b>	Low (≤ 1 hour)	121	28.7
	Medium (1.5 hrs < 3hrs)	145	34.4
	High (≥ 3hrs)	136	32.3
<b>Mean (SD)</b>	<b>127.815(77.828)</b>		
<b>Computer</b>	Low (≤ 0.5 hr)	0	0
	Medium (0.5hr < 2hrs)	109	25.9
	High (≥2hrs)	55	13.1
<b>Mean (SD)</b>	<b>41.378(59.824)</b>		
<b>Tablet</b>	Low (Not use)	68	16.1
	Medium (< 1hrs)	47	11.2
	High (≥1hrs)	23	5.5
<b>Mean (SD)</b>	<b>10.463(28.117)</b>		
<b>Smartphone</b>	Low (Not use)	19	4.5
	Medium (< 1hrs)	137	32.5
	High (≥1hrs)	265	62.9
<b>Mean (SD)</b>	<b>92.672(47.654)</b>		
<b>Total Duration</b>	< 2 hrs	47	11.2
	≥2 hrs	374	88.8
<b>Mean S(SD)</b>	<b>4.532(1.965)</b>		
<b>Mothers' activities on electronic media</b>			
<b>TV</b>	Series	312	74.1
	News programs	108	25.7
	Entertainment programs	239	56.8
	Educational programs	28	6.7
<b>Computer</b>	Series	15	3.6
	Entertainment programs	59	14.0
	Educational programs	32	7.6
	Social communication	49	11.6
	Work completion	91	21.6
<b>Portable devices (Tablet, Smartphone)</b>	Series	29	6.9
	Entertainment programs	103	24.5
	Educational programs	7	1.7
	Social communication	406	96.4
	Online search	331	78.6
	Play games	78	18.5

**Table 6:** Knowledge score levels of mothers regarding electronic media used by their children under five years (n=421)

Item	Poor		Fair		Good		Mean (SD)
	n	%	n	%	N	%	
Meaning and Forms of Electronic Media (5 items)	183	43.5	115	27.3	123	29.2	1.857(.841)
Causes of using electronic media (5 items)	241	57.2	151	35.9	29	6.9	1.496(.623)
Potential benefits of electronic media use (8 items)	318	75.5	81	19.2	22	5.2	1.297(.560)
Potential risks of electronic media use (16 items)	352	83.6	34	8.1	35	8.3	1.247(.594)
Recommendation for healthy use of electronic media (16 items)	318	75.5	61	14.5	42	10.0	1.344(.653)
Parental mediation strategies (5 items)	240	57.0	117	27.8	64	15.2	1.581(.741)
Ways for enhancing child's communication skills (3 items)	242	57.5	120	28.5	59	14.0	1.565(.726)
Importance of playing (5 items)	199	47.3	135	32.1	87	20.7	1.734(.781)
Types of play and toys (6 items)	157	37.3	91	21.6	173	41.1	2.038(.885)
Safety considerations during selecting the recommended toys (9 items)	199	47.3	111	26.4	111	26.4	1.791(.833)
The recommended toys according to child age (33 items)	414	98.3	6	1.4	1	0.2	1.019(.153)
<b>Total Knowledge (111 items)</b>	<b>349</b>	<b>82.9</b>	<b>62</b>	<b>14.7</b>	<b>10</b>	<b>2.4</b>	<b>1.194 (.452)</b>

Note. Poor less than 50% (< 55.5)  
 Fair from 50% to less than 65% (55.5 <83.25)  
 Good 65% and more (≥83.25)

**Table 7:** Improper practice scores of mothers regarding electronic media used by their children under five years (n=421)

Item	Improper		Mean (SD)
	n	%	
TV uses (15 items)	329	78.1	1.218(.413)
Computer uses (9 items)	60	14.3	1.857 (.350)
Portable devices uses (9 items)	346	82.2	1.178 (.383)
The usage of TV during daily life activities (4 items)	328	77.9	1.221(.415)
The usage of computer during daily life activities (5 items)	9	2.1	1.979 (.145)
The usage of portable devices during daily life activities (7 items)	234	55.6	1.444(.497)
Applying parental mediation strategies (6 items)	409	97.1	1.028 (.167)
Commenting on the displayed programs (4 items)	420	99.8	1.002 (.0487)
Avoiding undesirable scenes (5 items)	275	65.3	1.347(.476)
Outdoor playing (6 items)	322	76.5	1.235(.424)
Safety considerations during selecting the recommended toys (9 items)	389	92.4	1.076(.265)
The recommended toys according to child age (33 items)	421	100.0	1.000 (.000)
<b>Total practice (113 items)</b>	<b>420</b>	<b>99.8</b>	<b>1.002 (.0487)</b>

Note. Improper less than 75% (< 174.75)  
 Proper more than 75% (≥174.75)

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