

## Mothers' Perception Regarding Effect of Internet Usage on Health Status of their Children

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### Abstract

**Background:** Internet is easily accessible for children. Excess screen time exposure can cause negative impact on physical, social, emotional, and psychological wellbeing of children. **The study was aimed** to assess mothers' perception regarding the effect of internet usage on health status of their children. **Design:** A descriptive research design was utilized **Subject:** Purposive sampling of 150 mothers and their preschool age children were included in the study **Setting:** the study was conducted at Hemayt El Osra Nursery School, Childhood Care and Development Center, Jannati Nursery and El Shaima Nursery. **Tools:** two tools were utilized **Tool I:** Internet usage questionnaire. **Tool II:** mothers' attitude regarding internet usage on health status of their children. **Results:** More than two quarters (76%) of studied mothers had moderate level of knowledge about internet usage and 64% of them had negative attitudes toward internet usage. **Conclusion:** it could be concluded that more than three quarters of the studied mothers had moderate level of knowledge about internet usage on health status of their children, while two thirds of them had negative attitudes toward internet usage on health status of their children. There was positive significant correlation between mothers' education and their total knowledge score. Additionally, there was no statistically significant correlation between total mothers' knowledge and their total attitude scores. **Recommendations:** Educational instructions must be designed for mothers to raise awareness about the detrimental impacts of internet usage on their children's health.

**Keywords:** Children- Health Status- Internet Usage- Mothers' Perception.

### Introduction

A healthy society consists of healthy families and children; therefore, healthy children are not only important for families and for society but also very important for the well-being of the entire nation. Today, healthy children are the parents, leaders, workers, and decision-makers of the future. A healthy child is one who does not show any illnesses but shows body growth, cognitive development, and physiological maturity. The first few years of a child's life are critically important, as they are the basis for the rest of their future life. (Gronhoj & Gram,2020).

A preschool child is one who is able to establish relationships outside the circle of the family and is prepared for nursery and the world outside the home. The preschool child is affected mostly by external factors, and there is a good likelihood that the child will continue developing new attitudes, behaviors, and practices. The preschool period includes the age ranges from 3 years old to the end of the child's fifth years. Preschool period is the time when a child interacts, learns from, and communicates with the immediate and extended family as

well as the care providers in the nursery schools. **(Bekir,2020).**

Due to the ease of use and affordability of these gadgets, preschoolers are interacting with them more and more when it comes to portable and mobile technology, such as smartphones and tablets. Young children are accustomed to using touch screens from an early age, even though they do not own smartphones or tablets of their own. Instead, they can use their parents' devices. **(Zigh et al., 2020).** While most children can use these devices with ease, mobile technologies are much more. Since most children can use the devices with ease, mobile technologies are far more entertaining and highly motivating than traditional teaching methods. **(Matzavela & Alepis, 2021).**

The influence of technology on the lives of people is only growing. Young children in preschool are increasingly becoming a vital part of this reality. Although preschoolers can pick up reading and language skills through play or entertainment with well-designed programs or interactive media, they still need adult supervision and connection. **(Choi, Kirkorian & Pempek, 2021)** However, children who spend too much time in front of screens suffer from it. Reduced sleep duration, the possibility of having poor social skills, bad habits and obesity, unsuitable behavioral features, and exposure to inappropriate information were the majority of these impacts. **(Beyens & Nathanson, 2019).**

Digital screen exposure may be harmful to children's physical health, cognitive abilities, and psychosocial development, even while high-quality screen activities meet some educational and enjoyment demands. As a result, it is important to control young children's screen usage by balancing the hazards and benefits. According to recommendations from the American Academy of Pediatrics (AAP),

children under the age of 18 to 24 months should never use screen media, and older children should not use it for more than an hour a day. **(Karani, Sher & Mophosho, 2022)**

Children who spend too much time on screens are more likely to experience negative physiological and health effects, such as poorer physical and mental health as well as lower physical fitness. **(Sturm, Kelso, Kobel & Demetriou, 2021)** According to recent recommendations from the Royal College of Pediatrics and Child Health, the lack of other healthy activities like exercise, restful sleep, and socializing may be partially to blame for the seeming negative health impacts of screen time. **(Viner, Davie & Firth, 2019)**

Young children's worlds are unrestricted invaded by electronic media and internet use. Long-term effects on physical, psychological, and developmental milestones have been shown to have both positive and negative effects. However, there is no accurate information on the amount of electronic media and internet usage by children under five years old in poor nations. Therefore, it is critical to raise mothers' awareness of how to use the internet and other electronic media responsibly with their children. That is why this study set out to determine mothers' perceptions of how internet usage affects children health.

### **Significance of the study**

Using internet is common by children in daily life. Previous studies indicate that Children of the present generation are being exposed to technology at younger ages than ever before since they are growing up at a time when mobile gadgets are commonplace items of everyday life. Overusing cell phones can have a number of negative effects on one's physical and mental health, including sleep deprivation, low IQ and inappropriate brain

development in children, reduction in child's food intake, wasting time, affecting child's eyes, affecting child's ears, predisposing the child to have headache, back aches, finger tingling, brain tumors and psychiatric diseases.

Children may easily stay in touch anytime they want to because over 90% of parents provide them cell phones. All of this can cause harms on children's health. (Akkara, Jose , & Francis, 2021) Therefore, this study was carried out to assess mothers' perception regarding effect of internet usage on health status of their children.

### Research design

A descriptive research design was utilized in the current study.

### Setting

The study was conducted at Hemayt El Osra Nursery School which is affiliated to a Social Solidarity Directorate, Gharbiya Governorate and Childhood Care and Development center which affiliated to the Faculty of Education, Tanta University and Jannati, El Shaima Nursery at Kafr Al Sheikh governorate.

### Subjects

Purposive sampling of 150 mothers and their preschool age children attending to the previously mentioned settings (25 child from Hemayt El Osra Nursery School, 25 child from Childhood Care and Development center, 50 child from Jannati Nursery and 50 child from El Shaima Nursery). The sample size was calculated using (Epi-Info) software statistical program according to the total number of the mothers and their children attending to the nursery, based on level of significance (95%), study power (80%), and type I error 0.05 with confidence level 95% using the sample size equation for estimation of single proportion.

### Inclusion criteria for children

- Both sexes.
- Preschool age from 3-6 years.

-Free from any communication disorders.

### Tools for data collection

**Two tools were used to collect data in this study**

**Tool I: Internet usage questionnaire** The researcher developed this tool after reviewing the relevant literature (Adeoye Olatunde & Olenik, 2021) and it included two parts:

**Part (1): Mothers and children socio-demographic characteristics.** It included two sub items

- a) Mothers' socio demographic data.
- b) Children's sociodemographic characteristics.

**Part (II): Mothers' knowledge about internet usage:** it included questions regarding meaning of internet, uses of it, advantages, disadvantages, the recommended age of the child at the first use of internet, recommended number of hours using devices, types of devices used, mobile programs, effect of internet using as physical, psychological, social and emotional.

**Part (III): Mothers' knowledge regarding effect of internet usage on children's health**

**a- Positive effects for example:** mind being activated, affect child's skills, self-confidence, educational level, child's knowledge, child's activities, and child's imagination.

**b-Negative effects for example:** child violence, child isolation, affected child's concentration, affected child's hobbies, affected child's nursery achievement, affected child's food intake, wasting time, affected child's eyes, child has headache, child has back aches, child has finger tingling, affected child's ears, affected child's sleep.

**Mothers' knowledge was scored as the following**

- Ccorrect and complete answers was scored (2).

- Correct and incomplete answers was scored (1).
- Wrong answer or don't know was scored (0).

**The total score of mothers' knowledge was calculated as the following**

- Less than 50% was considered low level of knowledge. a.
- From 50 <75% was considered moderate level of knowledge.
- From 75-100% was considered high level of knowledge. b.

**Tool II: Mothers' attitude regarding internet use:** This tool was developed by Kesici & Tunç, (2018) and was adapted by the researcher. A Likert scale was used to assess mothers' attitude regarding internet use, scale with three continuums (Agree, Neutral and Disagree). It consisted of 10 statements to which the mothers were asked to respond.

**Examples of statements that were used such as**

- I feel that child become less creative because of using mobile.
- I feel happy when child spends time on mobile.
- The child should keep tablet or mobile around when going to sleep.
- I can control the time spent by child on mobile.

**Scoring system**

Agree was scored (2), Neutral was scored (1) & Disagree was scored (zero)

The scores of these items were summed up score. These scores were converted into a percent score and means and standard deviations were computed.

**Total scores of attitudes = 20 points**

- **Positive** when the total score was  $\geq 80\%$  ( $\geq 20$  points).
- **Negative** when the total score was  $< 80\%$  ( $\leq 20$  points).

**Method**

1. Official permission was obtained from the Dean of Faculty of Nursing to

conduct the study then official permission to conduct the study was obtained from the responsible authorities of the three selected nursery schools at Tanta and Kafr Al Sheikh city after explaining the aim of the study.

**2. Ethical considerations: -**

Ethical approval to conduct the study was taken from Scientific Research Ethical Committee at the Faculty of Nursing with code number 174/12/2022. Nature of the study did not cause any harm or pain to the entire sample.

Privacy and confidentiality were taken into account when collecting data.

Mothers were reassured that their participation is voluntary and that they can withdraw from the study at any time, and their consent to participate was obtained.

3. Content validity had been confirmed by a jury of five expertises in Pediatric Nursing before conducting the study.
4. A pilot study was carried out on 10% of mothers to test the feasibility and clarity of tools according to that necessary modification was done. The pilot study was excluded from the study.
5. Cronbach's alpha for knowledge score was 0.780 (high reliability). Cronbach's alpha for attitude score was 0.740 (good reliability)
6. The researcher met all mothers and their children to assess children who met the inclusion criteria. The researcher first met mothers in the waiting room to establish their trust and cooperation by outlining the study's aim.
7. The aim of the study was explained to the mothers.
8. A written consent was taken from mothers.
9. Meeting with mothers was held in the afternoon period in the time period from 1pm to 2 pm after finishing the nursery activities.

10. Total number of mothers interview was conducted individually and sequentially from each setting (25 mothers from Hemayt El Osra Nursery School, 25 mothers from Childhood Care and Development center, 50 mothers from Jannati Nursery and 50 mothers from El Shaima Nursery with total number of 150 mothers.
11. The researcher met mothers in the previously mentioned settings 3 days per week.
12. The data was collected within 6 months.
13. Some questionnaires were filled by mothers themselves in the presence of the researcher after replaying all quires, while others were filled by the researcher through question / answer technique.

### Results

**Table (1):** portrays percentage distribution of studied mothers regarding their sociodemographic characteristics. It was revealed that more than two thirds of the mothers (68%), their age ranged from 20-29 years old and about one quarter of them (27.3%) were from 30-39 years old, while the least percent (4.7%) were from 40-49 years old with Mean  $\pm$ SD= 28.63+4.38.

Concerning marital status, it was clear that the majority of mothers (92.7%) were married and 4.0% of them were divorced while, minorities of them (3.3%) were widow. Regarding their residence, about two thirds of them (62.0%) were living in urban area, while about 38% of them were living in rural areas. As regards job, about three quarters of mothers (74.7%) were working, whereas one quarter of them (25.3%) weren't working.

As regards mothers' education, about two thirds of them (65.3%) had university education and one third of them (30.7%) had secondary education. Regarding their family type, about two thirds of them (61.4%) were having nuclear family and

one third of them (33.3%) were having extended family. As regards family size, about one quarter of them (27.3%) had 4 members and 24.6% of them had less than 3 members with Mean  $\pm$ SD (5.17+2.46).

**Table (2):** clarifies percentage distribution of children regarding their sociodemographic characteristics. As regards child's age, about one third of them (32%) aged  $\leq$ 3 years old and 28.7% of them aged 4 years old with Mean  $\pm$ SD 4.29 $\pm$ 1.15. As regards child's sex, about more than half of the children (53.3%) were males, whereas 46.7% of them were females. The table also revealed that about two thirds of them (61.3%) were the first child in the family while one third of them (30.7%) were the second child in family.

**Table (3):** describes mothers' knowledge about internet. Regarding meaning of internet, more than half of the mothers (59.3%) had correct incomplete answers. Concerning uses of internet, more than half of them (56.0%) had correct incomplete answers. The table points that 58% of mothers reported correct incomplete answers in relation to advantages of internet while half of them (50%) had correct incomplete answers regarding disadvantages of internet

As regards the suitable age for using internet, there was more than half of mothers (56%) had correct answers, and for suitable duration of using internet, more than half of mothers (58.7%) had correct answers. The table also revealed that the majority of mothers (92.7 %) had correct incomplete answers related to physical effects of internet.

The table also clarifies that, three quarters of mothers (75.3%) had correct incomplete answers related to social effects of internet. In addition, the majority of mothers (82%) had correct incomplete answers regards psychological effects of internet. The table also clarifies that, more than three quarters

of them (76%) had also correct incomplete answers regarding effect of internet on attention.

Concerning the effect of internet on daily activities, it was observed that the majority of mothers (92.7%) had correct incomplete answers , while two third of them (65.3%) had correct incomplete answers about positive effects of internet on child's health Finally, as regards negative effects of internet on child's health, more than three quarters of mothers (76%) reported correct incomplete answer.

**Table (4):** describes total mothers' knowledge scores about internet usage. It was observed that slightly more than three quarters of mothers (76%) had moderate level of knowledge while 14.7% of them had mild level of knowledge and 9.3% had high level of knowledge with Mean  $\pm$ SD =  $15.63 \pm 2.95$ .

**Table (5):** reveals total mothers' attitude scores toward internet usage. It was found that about two thirds of studied mothers (64%) had negative attitude, whereas more than one third of them (36 %) had positive attitude toward internet usage on health status of their children with Mean  $\pm$ SD=  $13.99 \pm 2.77$ .

**Table (6):** explains correlation between total mothers' knowledge and their total attitude scores. It was clear that, there was no significant correlation between total mothers' knowledge and their total attitude score, where  $r = 0.317$  and  $p = 0.094$ .

**Table (7):** illustrates correlation between total mothers' knowledge score, their age, level of education, family size and their children age and birth order. It was clear that, there was positive significant correlation between mothers' education and their total knowledge where  $r = 0.295$  and  $p = < 0.001$ . On the other hand, there was negative significant, correlation between family size and mothers' total knowledge  $p = 0.01$

**Table (1): Percentage distribution of studied mothers regarding their sociodemographic characteristics.**

Variables	Number (n=150)	%
<b>Age in years:</b>		
20-29	102	68.0
30-39	41	27.3
40-49	7	4.7
Mean $\pm$ SD	28.63 $\pm$ 4.38	
<b>Marital status:</b>		
Married	139	92.7
Divorced	6	4.0
Widow	5	3.3
<b>Residence:</b>		
Urban	93	62.0
Rural	57	38.0
<b>Job:</b>		
Working	112	74.7
Not working	38	25.3
<b>Mothers' education:</b>		
Primary	6	4.0
Secondary	46	30.7
University	98	65.3
<b>Family type:</b>		
Nuclear	92	61.4
Extended	50	33.3
Single parent	6	4.0
Grand parents	2	1.3
<b>Family size:</b>		
$\leq$ 3	37	24.6
4	41	27.3
5	28	18.6
6	11	7.3
7	11	7.3
8 $\pm$	22	14.9
Range	2-14	
Mean $\pm$ SD	5.17 $\pm$ 2.46	

**Table (2): Percentage distribution of children regarding their sociodemographic characteristics.**

Variables	Number (n=150)	%
<b>Child's age in years</b>		
≤3	48	32.0
4	43	28.7
5	26	17.3
6	33	22.0
Range	2-6	
Mean±SD	4.291.15	
<b>Child gender:</b>		
Males	80	53.3
Females	70	46.7
<b>Child's birth order:</b>		
1	92	61.3
2	46	30.7
3±	12	8.0

**Table (3): Percentage distribution of studied mothers according to their knowledge about internet usage.**

Items of knowledge	N=150					
	Incorrect answers		Correct Incomplete answers		Correct answers	
	n	%	n	%	n	%
Meaning of internet	1	0.7	89	59.3	60	40.0
Uses of internet	4	2.7	84	56.0	62	41.3
Advantages of internet	1	0.7	87	58.0	62	41.3
Disadvantages of internet	5	3.3	75	50.0	70	46.7
Suitable age for using internet	65	43.3	1	0.7	84	56.0
Suitable duration of using internet	59	39.3	3	2.0	88	58.7
Physical effects of internet	2	1.3	139	92.7	9	6.0
Social effects of internet	13	8.7	113	75.3	24	16.0
Psychological effects of internet	6	4.0	123	82.0	21	14.0
Effect of internet on attention	8	5.3	114	76.0	28	18.7
Effect of internet on daily activities	0	0.0	139	92.7	11	7.3
Positive effects of internet on child's health	23	15.3	98	65.3	29	19.4
Negative effects on child's health	1	0.7	114	76.0	35	23.3



**Table (4): Total mothers' knowledge scores about internet using.**

Total knowledge score	Number (n=150)	%
Mild	22	14.7
Moderate	114	76.0
High	14	9.3
Range	7-25	
Mean±SD	15.63±2.95	

**Table (5): Total mothers' attitude scores toward internet.**

Total attitude score	Number (n=150)	%
Negative	96	64.0
Positive	54	36.0
Range	5-19	
Mean±SD	13.99±2.77	

**Table (6) Correlation between total mothers' knowledge and their total attitude scores.**

Variable	Total attitude score	
	R	p
Total knowledge score	0.137	0.094

Statistical significance at p=0.05 level

**Table (7): Correlation between total mothers' knowledge score, their age, level of education and their children birth order.**

Variables	Knowledge score	
	r (rho)	p
Mothers' age	-0.015	0.852
Family size	-0.197	0.015*
Mothers' education	0.295	<0.001*
Child's birth order	-0.094	0.554
Child's age	0.021	0.796

\* Statistical significance at p=0.05 level

## Discussion

Children are integrating digital technology more and more into their daily lives, and this is having an increasing impact on their social, emotional, and cognitive development. Technology offers many opportunities for children to play, explore, and learn. Nowadays, most children have access to a variety of modern equipment at home, including TVs, computers, and smartphones. According to certain research, preschool-aged children watch more television or use their smartphones and tablets than they do computers. **(Moon, Mathews, Oden & Carlin, 2019).**

Concerning mothers' total knowledge scores about internet; the current study showed that more than three quarters of mothers had moderate level of knowledge regarding the effect of internet usage on children's health status. From the researcher point of view, this might be due to high educational level as two thirds of them had university education, in addition to their work and urban residence where about three quarters of mothers were working, and two thirds of them were living in urban area, all such factors facilitate their acquisition of knowledge. This result was matched with **Özyurt, Dinsever, Çalışkan & Evgin, (2018)** who revealed that more than half of their participants had average total knowledge score regarding effects of digital technological device use in preschool children.

Also, this finding was in agreement with **Nassar & Mohammed, (2021)** who showed that the average total knowledge score of more than three quarters of mothers' in their study about technology addiction in preschoolers.

Concerning total mothers' attitude scores toward internet, the present study showed that about two thirds of the studied mothers had negative attitude toward internet usage on health status of their children.

From the researcher point of view, these mothers had moderate level of knowledge and more than two thirds of them were highly educated so they can easily acquire knowledge about the internet and its negative impact on their children's health. At the same time, they can easily discover any changes occur to their children because of usage mobiles or internet, all of this will in turn change their attitudes and become keener on their children to protect them from its hazards so they had a negative attitude toward usage internet.

This result was in harmony with **Nassar & Mohammed, (2021) & Shin & Li (2017)** who revealed that less than three quarters of studied mothers in their studies had a negative attitude regarding internet and technology addiction.

The current study illustrated that there was no significant correlation between total mothers' knowledge and their total attitude score. This finding may be due to mothers may have knowledge about internet and its correct use for their children but, they may be unable to set a correct and safe regimen for their use. On the same line, **Gür & Türel, (2022)** stated that there was no significant relation was found between perception of mothers and attitude about internet and digital technology using in children. This finding disagreed with **Papadakis, Zaranis & Kalogiannakis, (2019)**, who stated that a positive relation was found between parents' awareness and their total attitude related to internet use.

Another study by **Akgün, (2023)** was contradicted with the current study findings that showed that there was a positive correlation between mother's total knowledge score and their total attitudes score toward children's use of technology. In the same context, a study performed by **Tewenge (2019)**, was contravene with the current study findings that showed that there was a positive correlation between total knowledge score, total practices score and total attitudes score of their study participants.

The current study observed that there was positive significant correlation between mothers' education and their total knowledge and there was also negative significant correlation between family size and their total knowledge. This may be explained that increasing level of education, the level of knowledge of mothers will be increased because they can read and search about the topic on the contrast to others who had low level of education. Additionally, the size of the family and the number of children in it has a big role. As found in this study results that more than one quarter of mothers had 4 members therefor with the smaller number of children, the mother has time to learn, understand, and take care of her children.

This result was in line with the findings reported by **Goncalves, Byrne, Viana & Trost, (2019)** who found that there was a significant correlation between level of education and total level of knowledge among the studied subjects. This was inconsistent with **Waziry (2019)** who reported that there was no significant relation found between mothers' knowledge and their level of education.

This study revealed no statistically significant relationship between mothers' attitudes and their age, level of education and child's age, child's birth order. This result was congruent with **Alkalash et al., (2023)** who reported that there was no correlation found between child's age, birth order and mothers' attitude. **Zhou, Zhu, Sun, & Huang (2022)** also stated that there was no significant association found between parents' educational level, child characteristics and attitude of the participant.

In conclusion, young children's daily activities, behavior, and development are greatly influenced by media exposure, with preschoolers being one of the main target audiences. We have shown that preschoolers who spend a lot of time online are more likely to experience externalizing issues, even if they have never experienced problems with externalizing before. Parents' knowledge and attitudes on screen time exposure for their children under six years old were influenced by various factors, including gender, marital status, education, occupation, a child's use of a mobile phone, and kindergarten attendance. These factors underscore the significance of education and environmental impacts in this regard.

### **Conclusion**

**Based on the results of the present study, it can be concluded that:**

More than three quarters of the studied mothers had moderate level of knowledge about internet usage, while two thirds of them had negative attitudes toward internet usage on health status of their children. There was positive significant correlation between mothers' education and their total knowledge score. Additionally, there was no a

statistically significant correlation between total mothers' knowledge and their total attitude scores.

### Recommendations

**Based on the finding of the current study, it can be recommended that:**

1. Educational instructions must be designed for mothers to raise awareness about the detrimental impacts of internet usage on their children's health.
2. Public orientation for caregivers and nursery school teachers about the effect of internet usage on health status of the preschool age children must be done.
3. Parents and teachers should encourage children to engage in sport, artistic and social activities rather than usage the internet.

### References

- Adeoye Olatunde, O., & Olenik, N.(2021).** Research and scholarly methods: Semi structured interviews. *Journal of the American college of clinical pharmacy*, 4(10), 1358-1367.  
[DOI:https://doi.org/10.1002/jac5.1441](https://doi.org/10.1002/jac5.1441)
- Akgün, F. (2023).** Parents' Attitudes and Opinions towards Their Children's Use of Technology. *International Journal of Research in Education and Science*, 9(3), 597-622.  
[DOI: https://doi.org/10.46328/ijres.3157](https://doi.org/10.46328/ijres.3157)
- Akkara, S., Jose E, & V. Francis, E. (2021).** Student Acceptance and Perceptions of Mobile Learning: An Introspection to the Pedagogical Exigencies and Psycho-Physical Hazards of Student Community. In *Interactive Mobile Communication, Technologies and Learning* (pp. 281-292). Cham: Springer International Publishing.
- [https://doi.org/10.1007/978-3-030-96296-8\\_26](https://doi.org/10.1007/978-3-030-96296-8_26)
- Alkalash, S., Alshamrani, F., Alharthi, S., Alzubaidi, M., Alqarehi, R., Bazaid, A., & Bazaid, A. (2023).** Parents' Knowledge On, Attitude Toward, and Practice of Screen Time Exposure Regulation of Their Children Under Six Years of Age in Western Region, Saudi Arabia. *Cureus*, 15(11).  
[DOI: 10.7759/cureus.49464](https://doi.org/10.7759/cureus.49464)
- Bekir, H. (2020).** Early Child Development. In *Handbook of Research on Prenatal, Postnatal, and Early Childhood Development* (1<sup>st</sup> ed). Turkey :(p. 181-196). IGI Global.  
[DOI: 10.4018/978-1-7998-2952-2.ch010](https://doi.org/10.4018/978-1-7998-2952-2.ch010)
- Beyens, I., & Nathanson, A. (2019).** Electronic media use and sleep among preschoolers: Evidence for time-shifted and less consolidated sleep. *Health communication*, 34(5), 537-544.  
[DOI:https://doi.org/10.1080/10410236.2017.1422102](https://doi.org/10.1080/10410236.2017.1422102)
- Choi, K., Kirkorian, H., & Pempek, T. (2021).** Touchscreens for Whom? Working Memory and Age Moderate the Impact of Contingency on Toddlers' Transfer From Video. *Frontiers in Psychology*, 12, 621372.  
[DOI:https://doi.org/10.3389/fpsyg.2021.621372](https://doi.org/10.3389/fpsyg.2021.621372)
- Goncalves, W., Byrne, R., Viana, M., & Trost, S. (2019).** Parental influences on screen time and weight status among preschool children from Brazil: a cross-sectional study. *International Journal of Behavioral Nutrition and Physical Activity*, 16, 1-8.  
[DOI:https://doi.org/10.1186/s12966-019-0788-3](https://doi.org/10.1186/s12966-019-0788-3)

- Gronhoj, A., & Gram, M. (2020).** Balancing health, harmony and hegemony: Parents' goals and strategies in children's food related consumer socialization. *International Journal of Consumer Studies*, 44(1), 77-88.  
[DOI:https://doi.org/10.1111/ijcs.12547](https://doi.org/10.1111/ijcs.12547)
- Gür, D., & Türel, Y. (2022).** Parenting in the digital age: Attitudes, controls and limitations regarding children's use of ICT. *Computers & Education*, 183, 104504.  
<https://doi.org/10.1016/j.compedu.2022.104504>
- Karani, N., Sher, J., & Mophosho, M. (2022).** The influence of screen time on children's language development: A scoping review. *South African Journal of Communication Disorders*, 69(1), 825.  
[DOI:https://doi.org/10.4102/sajcd.v69i1.825](https://doi.org/10.4102/sajcd.v69i1.825)
- Kesici, A., & Tunç, N. (2018).** The Development of the Digital Addiction Scale for the University Students: Reliability and Validity Study. *Universal Journal of Educational Research*, 6(1), 91-98.  
[DOI: 10.13189/ujer.2018.060108](https://doi.org/10.13189/ujer.2018.060108)
- Matzavela, V., & Alepis, E. (2021).** M-learning in the COVID-19 era: physical vs digital class. *Education and Information Technologies journal*, 26(6), 7183-7203.  
<https://doi.org/10.1007/s10639-021-10572-6>
- Moon, R., Mathews, A., Oden, R., & Carlin, R. (2019).** Mothers' perceptions of the internet and social media as sources of parenting and health information: qualitative study. *Journal of medical Internet research*, 21(7), e14289.  
[DOI:10.2196/14289](https://doi.org/10.2196/14289)
- Nassar, O., & Mohammed, W. (2021).** Mothers' Awareness regarding Technology Addiction for Preschool Children. *Journal of Nursing Science Benha University*, 2(2), 485-497.  
[DOI:10.21608/JNSBU.2021.194586](https://doi.org/10.21608/JNSBU.2021.194586)
- Özyurt, G., Dinsever, Ç., Çalışkan, Z., & Evgin, D. (2018).** Effects of triple P on digital technological device use in preschool children. *Journal of Child and Family Studies*, 27, 280-289.  
<https://doi.org/10.1007/s10826-017-0882-6>
- Papadakis, S., Zaranis, N., & Kalogiannakis, M. (2019).** Parental involvement and attitudes towards young Greek children's mobile usage. *International Journal of Child-Computer Interaction*, 22, 100144.  
<https://doi.org/10.1016/j.ijcci.2019.100144>
- Shin, W., & Li, B. (2017).** Parental mediation of children's digital technology use in Singapore. *Journal of Children and Media*, 11(1), 1-19.  
<https://doi.org/10.1080/17482798.2016.1203807>
- Sturm, D., Kelso, A., Kobel, S., & Demetriou, Y. (2021).** Physical activity levels and sedentary time during school hours of 6th-grade girls in Germany. *Journal of Public Health*, 29, 847-855.  
<https://doi.org/10.1007/s10389-019-01190-1>
- Tewenge, J. (2019).** More time on technology, less happiness? Association between digital media use and psychological well-being. *Current direction in psychological science* ;28(4): P372-379.  
<https://doi.org/10.1177/0963721419838244>
- Viner, R., Davie, M., & Firth, A. (2019).** The health impacts of screen time: a guide for clinicians and

parents. Edinburgh, Scotland: *Royal College of Paediatrics and Child Health*.

<https://www.rcpch.ac.uk/screen-time>

**Waziry, O. (2019).** Mothers' Awareness Regarding the Use of Technological Devices by their Preschool Children. *International Journal of Novel Research in Healthcare and Nursing*,6(1), 786-80. Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

**Zhou, M., Zhu, W., Sun, X., & Huang, L. (2022).** Internet addiction and child physical and mental health: Evidence from panel dataset in China. *Journal of affective disorders*, 309, 52-62.

<https://doi.org/10.1016/j.jad.2022.04.115>

**Zigh, E., Elhoucine, A., Mallek, A., Kadiri, M., Belkacem, K., & Ensari, T. (2020, March).** Smartphone learning for Kids edutainment. In *Proceedings of the 3rd International Conference on Networking, Information Systems & Security* (pp. 1-5).

<https://doi.org/10.1145/3386723.3387862>