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ORIGINAL ARTICLE

Association between Digital Addiction and Sleep Habits for Preschool Children

AHMED SABAH NEAMAT[1], ADRAA HUSSEIN SHAWQ[2], WASNAA JOMAA MOHAMMED[3]
[1]*MSN, Clinical Nurse Specialist, Ministry of Health, Baghdad, Iraq*
[2]*PhD, Assistant Professor, Department of Pediatric Health Nursing, College of Nursing, University of Baghdad, Baghdad, Iraq*
[3]*PhD, Assistant Professor, Department of Basic sciences, College of Nursing, University of Baghdad, Baghdad, Iraq*
Correspondence to: Ahmed Sabah Neamat, Email: ahmed.sabbah1204b@conursing.uobaghdad.edu.iq

ABSTRACT

Background: Excessive screen time has been shown to be a harmful habit that starts in the beginning of child life. However, little is known about the factors that influence children use of digital media. Increased digital time in young children has been associated to unfavorable health effects, such as an increase in BMI.

Objective(s): The aim of this study is to detect the association between digital addiction and sleep habits for preschool children.

Methodology: A descriptive (Cross-Sectional Design) study was conducted on preschooler's parents by using the instrument of the study, the study was carried out through different governmental kindergartens at Al-Russafa and Al-Karkh Districts in Baghdad City to assess sleep habits regarding digital screen addiction for preschool children through period from November 1st, 2021, to March 7th 2022. The accessible population included the preschooler's parents whom their children attended to Government kindergartens. Non-probability, convenient sample of (200) child and parents is selected; (100) participant from Al-Rusafa District Government Kindergartens and (100) participant from Al-Karkh District Government Kindergartens.

Results: The results indicates that 62% of preschooler using digital screens at moderate level of addiction, and the mean score was moderate (30.03±4.039), and that 53% of preschool children show fair level of sleep style, and the mean score was fair (39.19±4.513).

Conclusion: More than half of the study sample scored on moderate level on digital screen addiction. Half of study sample scored on fair level of sleep style.

Recommendations: Increase parent's awareness about the negative effect of digital screen up on children by social media and educational posters. More future studies about the effects of digital screen up on the different age groups of children.

Keywords: Digital Addiction, Sleep Habits, Preschool Children.

INTRODUCTION

Digitals in the form of smart phones, televisions, laptops, and movie theaters make up a significant portion of the population. Although, it's a necessary component of everyday life, a substantial majority of children under the age of three (68%) utilize digital screen on a regular basis, such as television, DVDs, and video games (Hinkley et al., 2012).

Digital use refers to time spent on any electronic device having a screen, such as computers, tablets, televisions, game consoles, and cellphones. The spread of such devices in recent years has raised concerns about the influence of growing up in a digital world on children's development (Lee et al.,2014).

According to Ministry of Health recommendations, Children under the age of two should not have any recreational screen time, children aged two to five should have less than one hour per day, and children aged five to seventeen should have fewer than two hours per day (MOH, 2017).

Excessive screen time has been shown to be a harmful habit that starts in the beginning of child life (Certain & Kahn 2002). However, little is known about the factors that influence children use of digital media. Increased digital time in young children has been associated to unfavorable health effects, such as an increase in BMI (Hinkley et al., 2010).

A survey reports linking screens usage with variety of behavioral problems among young children (Low et al., 2021). Another detrimental effect is on sleep, Sleep has a huge influence on the health and well-being of children. Sleep is critical for growth and learning ability, and a prolonged absence of sleep can have long-term physical and psychological health implications (Hale & Guan 2015).

Also, the availability of electronic media can have an adverse effect on sleep (Reid Chassiakos et al., 2016). It has been demonstrated that too much digital view time reduces sleep time and quality, which can lead to low cholesterol levels and high blood pressure, and cardiovascular disease. Other extensive consequences include alterations to vision and a loss of bone density also despair and suicidal ideation probable side effects of too much digitals time use (Reid Chassiakos et al., 2016).

METHODOLOGY

Design of the Study: A descriptive (Cross-Sectional Design) study was conducted on preschooler's parents by using the instrument of the study, the study was carried out through different governmental kindergartens at Al-Russafa and Al-Karkh Districts in Baghdad City to assess sleep habits regarding digital screen addiction for preschool children through period from November 1st, 2021, to March 7th 2022.

Administrative Arrangements: A consequence of an Official permissions obtained from College of Nursing Council university of Baghdad, the Scientific Research Ethical Committee at the College of Nursing University of Baghdad, Ministry of Planning Central System for Statistics, Ministry of Education, that allows the researcher to collect the data in the related governorate Kindergartens

Setting of the Study: The present study is conducted through for (20) Government kindergartens in Baghdad city, the kindergartens was chosen by simple random sampling out of 345 kindergartens in Baghdad city, (10) kindergartens from Al-Russafa District out of (169) and (10) kindergartens from Al-Karkh District out of (176).

Sample of the Study: The accessible population included the preschooler's parents whom their children attended to Government kindergartens. Non-probability, convenient sample of (200) child and parents is selected; (100) participant from Al-Rusaafa District Government Kindergartens and (100) participant from Al-Karkh District Government Kindergartens. The sample was collected by Danial soper (2006) method. the sample of study were interviewed at the time around 8:00 – 9:00 am and 12:00 – 1:00 pm during parents followed up their children at kindergartens at that time.

Ethical Considerations: Regarding participant confidentiality and anonymity, the ethical committee of research at the college of nursing at the University of Baghdad and the faculty of education in Baghdad provided their consent. Parents of all children who have participated in the study had agreed to a written consent form which were attached with question. All parents are introduced with the study objectives and they are presented with the opportunity of being aware of the study affairs through written speech at the top of questionnaire.

Study Instrument: The instrument of the study included three scales, they were developed and adjusted by the researcher from the original one to be more consistent and clearer by the samples to be filled and more ease to be statically measured.

Data Collection: Data are collected by using the study instruments as means of data collection through self-report method. Data are collected for the period of February 25th, 2022, to March 25th 2022. After the official permissions are obtained from the managers of kindergarten, the questionnaires were distributed to be filled by parents, the researcher explained the purpose of the study in a simple paragraph that was written at the top of questionnaire.

Data Analysis: Analysis of Data The application of descriptive statistical data analysis methods such as frequency, percentage, mean, standard deviation, mean of scores, total of scores, and ranges as well as inferential statistical data analysis methods such as multiple linear regression and analysis of variance is used to analyze data. The data are examined between March 25 and April 10, 2022.

RESULTS OF THE STUDY

Table 1: Distribution of Sample`s Socio-demographic Characteristics

List	Child Characteristics		f	%
1	Gender	Male	107	53.5
		Female	93	46.5
		Total	200	100
2	Birth order	First	81	40.5
		Second	55	27.5
		Third	29	14.5
		Fourth +	35	17.5
		Total	200	100
3	Child age when get first digital screen	Haven't phone	75	37.5
		2 years	20	10
		3 years	40	20
		4 years	35	17.5
		5 years	30	15
		Total	200	100

Table 2:

Parent educational level	Father		Mother	
	f	%	f	%
Illustrate	0	0	8	4
Primary school qualification	24	12	24	12
Secondary school qualification	40	20	47	23.5
Bachelor qualification	136	68	121	60.5
Total	200	100	200	100

f: Frequency, %: Percentage

Table 2: Overall assessment Level of Digital Screen Addiction among preschool children

Levels	F	%	M	SD	Assess.
Low	74	37	30.03	4.039	Moderate
Moderate	124	62			
High	2	1			
Total	200	100			

f: Frequency, %: Percentage, Assess.: Assessment
M: Mean for total score, SD: Standard Deviation for total score
Low: 17 – 28.33, Moderate: 28.34 – 39.66, High: 39.67 – 51

Table 3: Sleep Styles scale among Preschool Children

No	Sleep Styles	Scale	F (%)	Mean	SD	Assess
1	My child goes to sleep every night at the same time	Never	14(7)	2.24	.569	Fair
		Sometime	124(62)			
		Always	62(31)			
2	My child falls asleep within 20 minutes after go to bed	Never	25(12.5)	2.15	.613	Fair
		Sometime	121(60.5)			
		Always	54(27)			
3	My child needs transitional objects to fall asleep	Never	10(5)	2.62	.581	Good*
		Sometime	56(28)			
		Always	134(67)			
4	My child refuses bedtime because use of screens digital until late time	Never	118(59)	1.60	.784	Poor
		Sometime	45(22.5)			
		Always	37(18.5)			
5	My child refuse to sleep alone because of digital screens contents	Never	16(8)	2.47	.641	Good*
		Sometime	74(37)			
		Always	110(55)			
6	My child uses digital screens until bedtime	Never	13(6.5)	2.57	.615	Good*
		Sometime	61(30.5)			
		Always	126(63)			
7	My child uses digital screens when wakes up at morning	Never	21(10.5)	2.41	.674	Good*
		Sometime	76(38)			
		Always	103(51.5)			
8	My child sleep at 8:00 pm.	Never	19(9.5)	2.30	.632	Fair*
		Sometime	103(51.5)			
		Always	78(39)			
9	My child sleeps 10-13 hours a day	Never	114(57)	1.47	.566	Poor
		Sometime	79(39.5)			
		Always	7(3.50			
10	My child wakes up during the night looking for digital screens.	Never	51(25.5)	1.89	.619	Fair
		Sometime	121(60.5)			
		Always	28(14)			
11	My child use digital device during bedtime	Never	6(3)	2.77	.491	Good*
		Sometime	35(17.5)			
		Always	159(79.5)			
12	When overuse digital screens my child suffer from insomnia at night	Never	21(10.5)	2.48	.679	Good*
		Sometime	63(31.5)			
		Always	116(58)			
13	My child has nightmares at night because content of digital screen	Never	8(4)	2.58	.570	Good*
		Sometime	68(34)			
		Always	124(62)			
14	During sleeping my child move with violent involuntary or irregular movements	Never	6(3)	2.70	.521	Good*
		Sometime	48(24)			
		Always	146(73)			

15	My child takes a nap afternoon	Never	28(14)	2.15	.643	Fair
		Sometime	113(56.5)			
		Always	59(29.5)			
16	I noted the prolong time of digital screens use reduces my child sleeping hours	Never	19(9.5)	2.40	.657	Good*
		Sometime	83(41.5)			
		Always	98(49)			
17	I noted when reduce time of digital screens use my child sleep calm	Never	23(11.5)	2.43	.691	Good
		Sometime	68(34)			
		Always	109(54.5)			

No: Number, SD: Standard Deviation, *reversed score, Poor= 1 – 1.66, Fair= 1.67 – 2.33, Good= 2.34 – 3

DISCUSSION

The study sample represents by approximately half of them (53.5%) are boys, and more than one third of them (40.5%) born as the first child in their family. In addition, more than half of preschooler (62.5%) owned their first digital screen before age of 5 years (table, 1).

According to research done in Diyala city in Iraq which aimed There are statistically significant differences between playing electronic games and gender, favoring male, according to research done to measure the level of addiction of kindergarten students to electronic games and the level of addiction of kindergarten students to electronic games depending on the gender variables. (Al-Mahdawi and Ali, 2019). A study in Saudi Arabia Arabian (2022) described that, most children get their smart phone at age seven years (Arabian Business, 2022). Add to that, a study done in United State (2022) about Children's engagement with digital devices, screen time and its results reported that, (40%) of children are introduced to smartphone use at the age of 5 to 11 years (Auxier et al.,2020).

More than half of preschool children (62%) score on moderate level of overall digital screen addiction, while one third of them (37%) score on low level as shown in table (2) and figure (2).

Parents were take a part and responsible for their children behaviors, children guardians should set a limit for digital use in addition to supervisor the content of digital media and its suitability for their age. The data was collected during the pandemic of COVID 19, most individuals worldwide use digital screen this could be another reason for overuse.

Unfortunately, the statistics show the highest percentages of parents sometime did not set a limit when their children use digital screen, their TV still on even they did not watch, and children did not ask for permission before use screen. Most of children use digital screen every day, especially after morning wake up, and most of them use digital screen at younger age. Most children prefer use digital screens rather than physical activities, they show conflicts when parents try to withdraw digital screens, and they imitates cartoon characters.

Behadil et al. (2020) in their study done in Baghdad on 240 primary school pupils in order to better understand how people respond to today's fast-paced, pervasive technology, it showed that Less than a half of students experience a severe level of smartphone addiction (44.2%), followed by those who experience a moderate level of smartphone addiction (43.3%), and those who experience a mild level of smartphone addiction (12.5%)

A study done by Diyala within (160) preschooler children to find out the addiction on electronic games the results showed that, children level of addiction on digital electronic games reaches the border line (Al-Mahdawi and Ali, 2019). Also Niranen et al. (2017) to examined the frequency of preschoolers' use of electronic media and the effects of heavy e-media use on their psychosocial development reported that, preschool children exceeded (95%) of the daily recommendation use of digital screen for their age group. Another study by Shah et al. (2019) which aimed to evaluate Children in rural Western India who are preschoolers (6 years old) who use screens. Additionally, consider how these lifestyle characteristics affect the amount of time these kids spend on screens reported that, most of children under six years used digital screens more than recommended daily use in India.

The statistics also document more than half of preschool children (53%) score on fair level of overall sleep style as shown in table (3). The result shows also most children score on good and fair level of sleep style (10 and 5 out of 17) items upon sleep style scale respectively (table 3).

This result could be to the effects of screen use upon children negatively because the results show that, most parents' reports unregulated sleeping time for their children, preschooler did not fall asleep within 20 minutes at bedtime and still use the digital screen until bedtime, they afraid to sleep because of the watching content on digital screen. The parent observe their children wake up during night for looking digital screen and they still wake up until late hours at night. The parent always observes involuntary movement during sleeping of their children and they think that prolong to the time of digital use while when reducing screen time their children sleep well.

According to a study done by Behadil et al. (2020) in Baghdad with topic "no mobile phobia phenomenon" showed that, teenagers who use electronic devices for 5 hours per day have a 51% higher chance of sleeping fewer than 7 hours than those who use them for 1 hour.

Concerning recommended sleeping hours, Mary and Gavin (2020) reported in their study about screen time guidelines for preschoolers that, healthy preschoolers required about (10 - 13 hours) of sleep during a day including naps. Also Fitch et al. (2001) said that, low sleeping hours than recommended time mostly linked with low attention and behavioral problems in addition to health problems.

The researcher point of view that using screens` light at sleeping time could decrease sleeping hormone (melatonin) that responsible to start calmness and sleepiness. The parents should set a limit or rules for their children when using digital screens; this behavior can decrease time watching however, unlimited screen time makes children unaware of time running. When parents supervised their children concerning content of media use, they may report good sleep style.

CONCLUSION

More than half of the study sample scored on moderate level on digital screen addiction. Half of study sample scored on fair level of sleep style.

Recommendations: Increase parent's awareness about the negative effect of digital screen up on children by social media and educational posters. More future studies about the effects of digital screen up on the different age groups of children.

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