



PREVALENCE OF SCREEN TIME ON ELECTRONIC SCREENING DEVICES IN CHILDREN LESS THAN 5 YEARS AGE GROUP: A HOSPITAL BASED CROSS SECTIONAL STUDY

Dr. V. Anusha Reddy

Assistant Professor, Department Of Psychiatry, Rajalakshmi Health City, Pennalur, Kancheepuram, Tamilnadu 602117

Dr. Lakshmi Charan

Consultant Neonatologist, Apollo Hospitals, Vanagaram, Chennai, Tamilnadu 600095

ABSTRACT

Aim : To study the prevalence of screen time on electronic screening devices in children aged less than 5 years age group in a private hospital based in Chennai, TamilNadu. **Material & Methods:** A cross-sectional study using a pre-structured questionnaire along with socio-demographic data on 300 children aged less than 5 years were assessed for a period of six months. **Results:** There is significant association between rural/urban background, type of family(nuclear/joint) and number of family members staying with the children found to be having p value <0.0001. Television and smart phones are the most common gadgets used for screen time by the children less than 5 years age. **Conclusion:** Excessive screen time in less than 5 year age group children leads to decreased quality of sleep and physical inactivity leading to many problems such as neurodevelopmental and speech delay, lack of communication skills, poor interactions and many more disorders.

KEYWORDS : Screen Time, Prevalence, Television, Smart phone

INTRODUCTION

Overusage of screen time on various platforms of social media has become a topical issue world wide. Electronic media usage of people on social media has seen explosive growth globally in the last 3-4 years years⁽¹⁾. Screen time (ST) is considered as excessive if it was more than 1 hour per day as per the American Academy of Pediatrics 2016 guidelines. Excessive ST has been associated with language and motor skill developmental delay^(2,3), in addition to its psychosocial impact in the growing age children. According to the American Association of Pediatrics guidelines, children aged less than 2 years should not have any ST, and those aged 2-5 years should be limited to 1 hour of high-quality education programs per day, monitored by their caregivers⁽⁴⁾.

The coronavirus disease 2019 pandemic has led to global school closures and a shift to online education, as a result leading to overusage of smart phones in day to day life of kids. Hence this study would like to shed light on the digitalization of children on screen time below 5 years age group.

MATERIALS AND METHODS

Aim:

1. To study the prevalence of screen time on electronic screening devices in children aged less than 5 years age group.
2. To study the demographic parameters associated with excessive screen time.
3. To study the most common electronic screening device used by the children.
4. To educate the parents on the adverse affects and impact on the growth of child with excessive screen time in such tender age.

Sample:

A total of 300 children aged less than 5 year age group visiting the out-patient department along with their parents after obtaining written informed consent were included in the study.

Procedure:

Prior to the undertaking of this study, ethical approval was obtained from the ethical committee of the hospital. Researcher explained the purpose of the study to parents and asked for their cooperation and permission.

explained how to respond to the questionnaire and that the data collected would be used solely for the purpose of the study and that their privacy and anonymity would be fully protected.

A Socio demographic schedule was used to collect the basic demographic details of the sample such as age, SES, religion. Then, the parents were asked to filled the pre-tested questionnaire, after which the researchers collected the data along with the written consents that the parents had duly signed. . Each parent of the child was given 20 minutes to complete the questionnaire.

Of the total 300 participants approached, 270 children were included in the study and 30 children were excluded due to incomplete questionnaire.

Statistical Analysis:

The data was collected and compiled in Microsoft office excel, 2007 and SPSS software was used to obtain results

The data was represented in percentages and proportions using tables and appropriate diagrams.

RESULTS:

A group of 300 children less than 5 years age group attending the hospital on out-patient basis were taken for the study. Out of which 270 children are taken and 30 are excluded from study. Their socio-demographic data including age of the child, age of both the parents, education level of parents, place of residence, number of siblings, religion, socio-economic status, are taken. Pre structured questionnaire is given to the parents and were asked to fill the questions.

The data are interpreted in the form of tables, flow charts and pie diagrams. The individual variables of the screentime are compared and further predictors are obtained.

There are very limited Indian studies on the current concept of screen time, so with the available data and resources the study is conducted unbiased.

Socio-demographic data is compared with the screen time parameters and finally there is a significant value in comparison with rural and urban background with p value <0.0001 which is highly significant as shown as follows:

The researcher then introduced the purpose of the study and

Table:

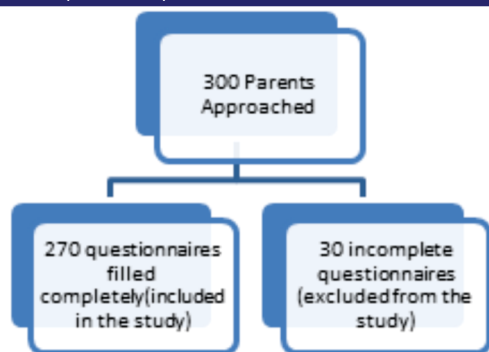


Table 1: Association Of Screen Time With Socio-demographic Factors: Place Of Residence And Screen Time

PLACE OF RESIDENCE			
	SCREEN TIME PRESENT	NO SCREEN TIME	TOTAL
RURAL	50	20	70
URBAN	185	15	200
			270
P VALUE			<0.0001*

Table 2: Type Of Family:

TYPE OF FAMILY			
	SCREEN TIME PRESENT	NO SCREEN TIME	TOTAL
NUCLEAR FAMILY	192	66	258
JOINT FAMILY	2	10	12
			270
P VALUE			<0.0001*

Table 3: NUMBER OF FAMILY MEMBERS:

NO.OF FAMILY MEMBERS			
	SCREEN TIME PRESENT	NO SCREEN TIME	TOTAL
<4 MEMBERS	98	88	186
4 OR >4 MEMBERS	72	12	84
			270
P VALUE			0.0001*

DISCUSSION:

There is growing evidence to suggest that children learn the most from screens when caregivers are actively engaged in viewing content with them.⁽⁵⁾

WHO guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age, it recommends no screen time under two years of age and to limit screen time in children 2 to 5 years to not more than 1 hour per day⁽⁶⁾

AAP guidelines (2016) recommends that children under 18 months avoid use of screen media other than video chatting. It recommends that parents of children 18 to 24 months of age who want to introduce digital media should choose high-quality programming and watch it with their children to help them understand what they are watching.⁽⁷⁾ It also says that when using digital media, high quality program has to be chosen and watched with co engaging adults.

Television and smartphone were found to be the major contributor to screen time by Shah RR et al, similar to our study.⁽⁷⁾

In our study, authors found no significant correlation between screen time duration in children with age, gender, parent's socioeconomic status, education and occupation. This finding is similar to the study by Hinkley T et al, at Australia where no demographic groups were identified as being less likely to comply with screen recommendations⁽⁸⁾

Screen time is being increasingly used by parents as a

method to engage the kid in the absence of caretaker. The progressing trend towards nuclear family system where parents lack proper support system for child rearing, could be a contributing factor for increasing screen time⁽⁷⁾

Further studies need to be done at a larger scale involving various demographic groups to understand the magnitude of this emerging problem. Studies with long term follow up of children from early childhood to adulthood would help us to understand the effects of prolonged screen time in early childhood on various domains of life⁽⁷⁾

Limitations:

- The present investigation is carried out in a private sector hospital in Chennai, in a limited period of time. The population of the present study is a selected one attending a private hospital on out-patient services which does not have the characteristics of the general population.
- Excessive screen time is a widely prevalent problem so a small sample of children cannot be generalised to whole of population.
- Cross-sectional design, which is not the best way to evaluate causal relations, also limited the results.
- Therefore, further larger studies with well-controlled clinical settings and various participants are suggested, wider longitudinal studies are required to plan interventional strategies in decreasing the prevalence of excessive screen time in children.
- Some of the limitations are due to natural constraints of an investigation which is a project work undertaken by a single investigator in a stipulated period of time.

CONCLUSION:

- Excessive screen time is highly prevalent in the age group of 5 and less than 5 years making them highly vulnerable.
- The Lack of knowledge about the early exposure leading to multiple neurodevelopmental delays like speech delay, lack of communication skills, poor interaction etc are major problems for the parents.
- Creating awareness and proper education about the treatment strategies might contribute to the positive outcome.
- Lifestyle modification, an important treatment plan (healthy diet and regular physical activities, out door games, less screen time or no screen time) also play an important role in decreasing the severity of problems in children.
- Increasing screen time activity among children in early childhood is an important upcoming problem of the digital age linked with negative physical, mental and social impact.
- Steps need to be taken at social level to increase awareness of parents regarding the side effects of prolonged screen time in children and to emphasise the need to adhere to the recommended guidelines. Interventions at family, school, social, health care, national and international levels are required to tackle this emerging problem.

REFERENCES:

- Varadarajan S, Govindarajan Venguidesvarane A, Ramaswamy KN, Rajamohan M, Krupa M, Winfred Christadoss SB (2021) Prevalence of excessive screen time and its association with developmental delay in children aged <5 years: A population-based cross-sectional study in India. *PLoS ONE* 16(7): e0254102. <https://doi.org/10.1371/journal.pone.0254102>
- Lin L-Y, Cherng R-J, Chen Y-J, Chen Y-J, Yang H-M. Effects of television exposure on developmental skills among young children. *Infant Behav Dev*. 2015; 38: 20–26. <https://doi.org/10.1016/j.infbeh.2014.12.005> PMID: 25544743
- Byeon H, Hong S. Relationship between Television Viewing and Language Delay in Toddlers: Evidence from a Korea National Cross-Sectional Survey. *PLoS One*. 2015; 10: e0120663. <https://doi.org/10.1371/journal.pone.0120663> PMID: 25785449
- Canadian Paediatric Society Ottawa, Ontario DHTE. Screen time and young children: Promoting health and development in a digital world. *Paediatr Child Health*. 2017; 22: 461–468. <https://doi.org/10.1093/pch/pxx123> PMID: 29601064

5. Rosin H. The Touch-Screen Generation: The Atlantic; 2013. [cited 2020 Dec 20]. Available from: <https://www.theatlantic.com/magazine/archive/2013/04/the-touch-screen-generation/309250>
6. World Health Organization. Guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age. World Health Organization. 2019. Available at: <http://www.who.int/iris/handle/10665/311664>. Accessed on 15 September 2019.
7. Shirley SA, Kumar SS. A study on screen time use in children between 24 to 60 months of age in Tamil Nadu, India. *Int J Contemp Pediatr* 2019;6:2582-6.
8. Hinkley T, Salmon J, Okely AD, Crawford D. The correlates of preschoolers' compliance with screen recommendations exist across multiple domains. *Preventive medicine*. 2013 Sep 1;57(3):212-9.
9. Rathnasiri, A., Rathnayaka, H., Yasara, N. et al. Electronic screen device usage and screen time among preschool-attending children in a suburban area of Sri Lanka. *BMC Pediatr* 22, 390 (2022). <https://doi.org/10.1186/s12887-022-03452-6>