



SCREEN TIME USAGE BEHAVIOUR IN CHILDREN OF MEGHALAYA – A QUESTIONNAIRE BASED STUDY

Paediatrics

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ABSTRACT

Objective: To study the screen time behaviour of children aged 6 weeks to 5 years along with their mothers **Design:** Questionnaire based Cross sectional study. **Setting:** The study was undertaken in the OPD and IPD areas of the Department of Paediatrics, Nazareth hospital, Shillong, India. **Participants:** Children aged 6 weeks to 5 years visiting the OPD and IPD areas of Department of Paediatrics and Neonatology, Nazareth Hospital, Shillong along with their mothers. **Main outcome measures:** Proportion of children meeting the AAP guidelines on screen time usage (2016). Association of socio-economic status, demographic factors. Contribution of parameters like usage of number of devices, time spent in indoor and outdoor play, age of first exposure to screen devices, exposure to screen devices during meal times, mother's screen time exposure. **Results:** The study included 80 children. 35% were females and 52% were males. 33.75% of the study population met the AAP guidelines (2016) whereas 66.25% did not meet the guidelines. Mean screen exposure time on weekdays and weekends were 1.19 ± 1 hours and 1.5 ± 1.4 hours. Average number of devices in each household was 5. Most children (88.75%) were exposed to screen devices before the age of one year. 55% children use screen devices during meal times. 7.5% children had screen usage in their bedrooms. The most widely used application was WhatsApp among the mothers (97.5%). Most mothers felt that the most harmful effect of excess screen time was attention and concentration problems. (81.25%) **Conclusions:** Higher screen time exposure was found among older age groups, on weekends as compared to weekdays and among those belonging to upper class. Children exposed to screen devices at an earlier age had more mean exposure to screen time. Children with devices in their bedrooms had more screen exposure. No association was seen with factors like gender, number of devices at home, usage of devices during meal time, time spent during indoor and outdoor play, mother's exposure to screen time.

KEYWORDS

Screen time, Demographic factors, AAP guidelines on screen time

INTRODUCTION

The word "media" applies to many things in the 21st century, from mass media to news media, and traditional media to the many emerging forms of digital media. The word 'Media' comes from the Latin word *medius* or *medium*, which means "the middle layer." Media is an expression that brings some type of information or entertainment from one body to another. (1)(2). Among under five children, excess screen time prevalence varies from 10% to 93.7% across the high-income countries and 21% to 98% in the middle-income countries. (3) Harmful effects of screen time exposure include obesity, sleep disturbances, posture and vision problems, body image perception, substance abuse. (4) The American Academy of Pediatrics (AAP) 2016 guidelines suggest to avoid use of screen devices except for video chatting under 18 months of age. Parents of children between 18-24 months should co view high quality programs. Limit screen time to 1 hour for children aged 2-5 years. (5)

This study aims to evaluate the epidemic of excess screen time usage and factors contributing to it.

METHODS

The study was carried out in the OPD and IPD areas of the Department of Paediatrics and Neonatology, Nazareth Hospital, Shillong, India in the year 2021. Data was collected and recorded in a pre-tested questionnaire after obtaining informed consent from the parent. The study was initiated subsequent to approval from the Institute Scientific & Ethics committees.

For comfortable interview, non-sick children and their mothers were preferably enrolled such as those children visiting well baby and immunization clinics and recovered children in IPD.

The primary outcomes studied were: Proportion of children meeting the AAP 2016 guidelines on screen time exposure, association of multiple devices with screen time exposure, association of the socio-

economic status of the family with the screen exposure. Contribution of parameters like ownership of device, device usage in bedroom. Association of screen time with the amount of time spent in indoor and outdoor play. Association of Mother's screen time knowledge and viewing habits with the screen time of the child.

Statistical analysis:

The data entry was done in the Microsoft EXCEL spreadsheet and the final analysis was done with the use of Statistical Package for Social Sciences (SPSS) software, IBM manufacturer, Chicago, USA, ver 21.0. The presentation of the Categorical variables was done in the form of number and percentage (%). The quantitative data were presented as the means $\pm$ SD and as median with 25th and 75th percentiles (interquartile range). The following statistical tests were applied for the results: The association of the variables which were quantitative in nature were analyzed using ANOVA; The association of the variables which were qualitative in nature were analyzed using Chi-Square test. If any cell had an expected value of less than 5 then Fisher's exact test was used; Univariate ordinal regression was used to find out significant factors affecting screen exposure.

For statistical significance, p value of less than 0.05 was considered statistically significant.

RESULTS

A total of 80 children were enrolled in the questionnaire based cross sectional study.

Out of 80 children, 28 children (35%) belonged to age group below 1 year, 25 children (31.25%) belonged to the age group of 1-2 years and the rest 27 children (33.75%) were above 2 years of age. Mean age of the study population was 1.91 years. Amongst the study population, 33.75% children met the AAP guidelines whereas 66.25% did not meet the AAP guidelines on screen time.

Mean age of children with screen time exposure of more than 2 hours was 3.15 years. Mean age of children with screen time exposure of 1-2 hours was found to be 2.03 years. Mean age of children with screen time exposure of <1 hour was 1.07 years. A positive association was found between screen time exposure and age ($p < 0.0001$).

A total of 35% females and 52% males were included. Gender was found to have no association with screen time exposure ($p = 0.217$).

Most children belonged to upper middle class (36.25%) followed by lower middle (35%). No study subject belonged to lower class. Study population belonging to the upper middle and upper lower classes had lower screen time exposure as compared to other classes. ($p = 0.035$, 0.025).

Mean screen exposure time on weekdays and on weekends of study subjects was found to be 1.19 ± 1 and 1.5 ± 1.4 hours. 57.50% had screen time exposure more than one hour on weekends as compared to 52.50% who had screen time exposure more than one hour on weekdays. Screen time exposure was found to be more on weekends as compared to weekdays. ($p < 0.0001$).

Most children (71.25%) had 4 or more devices at home. Mean number of devices was 5.01. Screen time exposure had no association with number of devices at home ($p = 0.155$).

Most children were exposed to screen devices before the age of 1 year (88.75%).

Exposure to screen time more than 2 hours was observed greater in those that were exposed to screen media at the age: 1-2 years and 2-3 years. ($p = 0.023$, $p = 0.045$).

A total of 55% study subjects were exposed to screen devices while eating but no significant association was found between this behaviour and total screen time exposure ($p = 0.210$).

40% parents reported that they use screen media devices to calm down their children and higher screen time (≥ 2 hours) was seen in these children ($p = 0.045$). No association was found between total screen time exposure and indoor play or outdoor play. ($p > 0.05$).

Only 7.5% had exposure to screen time in bedroom and a higher screen time (≥ 2 hours) was seen in those that had screen exposure in bedroom. ($p = 0.019$). 32.5% mothers reported using screen devices for a duration of 1-2 hours but no significant association was seen between mother's use of screen devices and their children's screen time use. ($p > 0.05$).

The most widely used application was WhatsApp among the mothers (97.5%). Most mothers felt that the most harmful effect of screen on their children was attention and concentration problems. (81.25%).

On performing univariate ordinal regression, age: 1-2 years, 2.1-3 years, >3 years, socio economic class: upper middle, upper lower, 1st screen exposure at 1 to 3 years, own media device in bedroom were significant risk factors of higher screen exposure.

On performing multivariate ordinal regression, age (years): 1-2 years, 2.1-3 years, >3 years; socio economic class: upper lower, were significant independent risk factors of screen exposure after adjusting for confounding factors

The present study shows the wide prevalence of excess screen time usage among children aged 6 weeks-5 years. An association has been seen with age, socio-economic status, age of screen exposure and usage of screen devices in bedroom. Screen time exposure was seen independent of mother's screen time usage, indoor play time, children given screen media during meal times.

DISCUSSION

Findings of the present study testifies to the fact that the screen devices has emphatically made its way into the lives of the urban young children of Meghalaya, India. The population of Meghalaya are predominantly scheduled hill tribes whose way of living is also getting rapidly urbanized. A minority of the population studied met the AAP guidelines on screen time. A significant majority were exposed to screens before the age of 1 year but thankfully only a small proportion

had screens in the bedrooms. As expected, screen exposure times were significantly higher on weekends. Higher screen times were noted in children of older ages because of independent viewing. Mothers did not report high screen times compared to their children, though this might be a bias as the data was collected from self-reporting. As expected, higher socio-economic classes had higher screen time exposures.

Limitations of the study:

- 1) Most population belonged to middle socio-economic status and hailed from urban areas.
- 2) Results were obtained from an interview-based questionnaire which could have led to a bias as mothers would try to avoid any judgements
- 3) The content and nature of screen exposure was not studied

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