



STUDY ON EFFECT OF SCREEN TIME IN UNDER-FIVE CHILDREN

Paediatrics

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ABSTRACT

Background: Excessive screen time in children plays a major role in causing health risks. So this study aims to evaluate the average screen time and its effects in children among under five children.

Aims And Objectives: To study the average screen time and its effects on children.

Methodology: This is a cross sectional observational study conducted in preschool children and toddlers in and around eluru from february 2021 to march 2021. Data is collected from parents by pre structured questionnaire and data is analysed using appropriate statistical methods.

Results: In this study majority of them had screen time duration between 2-4 hrs, 46.6% fall among 1-3 yr age group and 50.9% among 4-5 yrs age group. In this study, increased screen time lead to decreased sleep duration (p value = 0.01) and increased sleep latency (p value = 0.04).

Conclusion: In this study the average screen time of children had exceeded the current WHO and AAP recommended duration. High screen time of parents was significantly associated with increased screen time in children. Excessive screen time has effect on sleep pattern in children.

KEYWORDS

Screen Time, Sleep Latency, Parent Screen Time

INTRODUCTION:

Digital screen exposure OR Screen time is the duration of time spent by the individual in using electronic/digital media like television, smart phone, tablet or computer(1). Excess screen time exposure in early childhood is associated with harmful effects such as increased sedentary behaviour, poor sleeping habits, obesity, and developmental abnormalities.

WHO guidelines 2019 (2)

< 2 years of age – no screen time.

2-5 years of age – not more than 1 hour per day.

AAP guidelines (2016)

<18 months - avoid screen time except video chatting.

18-24 months - high quality programme with parents.

2-5 years - one hour per day of high quality programme and parents co-view to help children understanding what they are watching (3).

Excessive screen time is predominantly associated with sedentary behaviours in children(4). Excessive screen time is considered as one of the major role players in causing non communicable diseases and health risks in later life(5,6).

Given the rising epidemiology of lifestyle related disorders among Indian children which draw our attention purposefully to conduct this study, as early childhood is a period of rapid development and lays foundation for lifelong lifestyle routines and health.

AIMS AND OBJECTIVES:

To study the duration of screen time in under five children.

To study the effect of screen time on quality of sleep in children.

METHODOLOGY:

This cross sectional observational study was conducted in wellbaby clinic, ASRAMS Hospital, Andhra Pradesh.

This study was conducted over 2 months from February 2020 to March 2020, among 100 children.

Inclusion Criteria :

Children under five years age group attending well baby clinic.

Exclusion Criteria:

Children with developmental delay, intellectual disability, hearing impairment, behavioural disorders.

After obtaining institutional ethical committee clearance and informed consent, data was collected from the parents using a predesigned questionnaire.

The details regarding duration of screen time, contents, type of devices, sleep duration, sleep latency, outdoor physical activity, behavioural problems were collected by recall method.

Statistical Analysis:

The data collected was analysed with suitable statistical methods using SPSS 25 software.

Statistical significance was assessed at 5 % level of significance (p value < 0.05).

RESULTS:

In this study out of 100 children 55 children are preschoolers (4-5 years) age group and 45 children are toddlers (1-3 years). Majority of them had screen time duration between 2-4 hrs 46.6% among 1-3 yr age group and 50.9% among 4-5 yrs age group as shown in figure(1) and as the age increased duration of screen time also increased and p value (0.005) is statistically significant.

In our study it is observed that the occupation of mother whether house wife or employed and type of employment is not found significant (fig :2). However the increased phone usage of mother/father was found statistically significant in increasing the screen time value (fig :3) It is also observed that screen time is having impact on the sleeping patterns of children, screen time is found statistically significant in increasing the sleep latency and decreased duration of sleep in children (table:1)

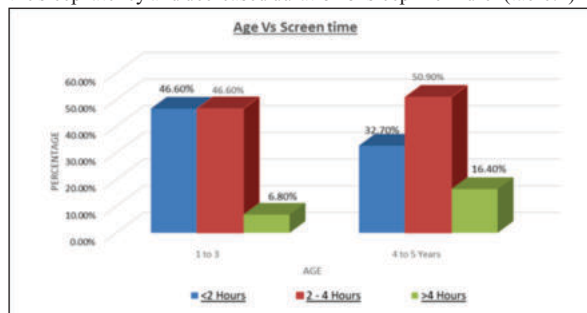


Figure 1: Chi Square Test Value Is =24.3 p-value = 0.005 (<0.05) Significant.

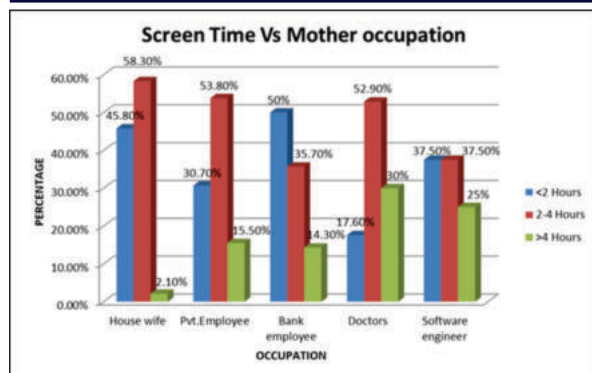


Figure 2: Chi Square Test Value Is = 14.2 p-value = 0.09 (>0.05) Not Significant.

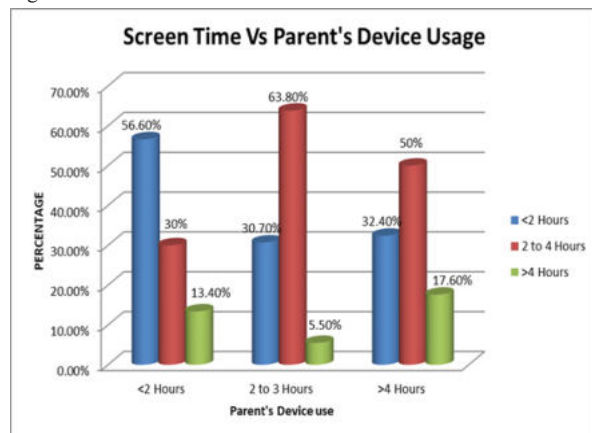


Figure 3: Chi Square Test Value Is = 9.49 p-value = 0.04 (<0.05) Significant.

Table 1: Screen Time Vs Duration Of Sleep

	Duration of sleep				
ST	6 Hrs	6 to 8 H	8-10 H	>10 Hrs	Total
<2 Hours	0	3(15.7%)	26(51%)	10(40%)	39(39%)
>2 Hours	5(100%)	16(84.2%)	25(49%)	15(60%)	61(49%)
Total	5(100%)	19(100%)	51(100%)	25(100%)	100(100%)

Chi square test value is = 10.58 p-value = 0.01 (<0.05) Significant.

DISCUSSION:

This study represents screen time and its effects in early childhood. The percentage of children watching screen for 2-4 hrs was more in 4-5 yrs age group than in 1-3 yrs age group. We found that majority of the children in our study did not meet WHO and AAP criteria which was similar to a study done by Shirley et al(7) in which only 14.2% participants meet AAP criteria.

A study on four year old Swedish children in 2017 by Berglind et al(8), 97% and 86% of children exceeding the 1 hour guideline for screening on week end days and week days respectively.

The percentage of children watching screen for > 4 hours was found to be more in employed mothers than in unemployed. However in our study, it is not statistically significant (p value = 0.09) which was similar to a study done by Hinkley et al(9) where they also identified no association between screen time and parental employment.

High screen time of parents was significantly associated with increased screen time in children (p value = 0.04).

The above observations in our study were similar to a study done by Shah RR et al(10) 2019, which revealed households with three devices and smartphone usage by parents increased the odds of screen time by 60% and two-folds, respectively (p value = <0.01).

A study done by Kourlaba et al(11) (2018) also showed a significant relationship between parents screen time and children screen time.

The current study found that parents screen time independently and significantly predicted their children's screen time, which replicates findings from a systematic review(12). This suggests that parents screen time may be key target for intervention.

In our study, we found that increased screen time led to decreased sleep duration (p value = 0.01) and increased sleep latency (p value = 0.04).

Chen et al 2019(13) at Singapore showed that each 1h per day increment in total Screen time was significantly associated with 0.26 h shorter sleep duration with similar significant associations for TV and mobile devices.

In another study done by Xu et al (2016) each additional hour of screen time was associated with three-minute shorter sleep, 1.6-minute longer sleep latency, four-minute later bedtime and less likely sleeping ≥ 10 hours per night(14).

CONCLUSION:

In this present study most of our children had average screen time of 4 to 5 hrs showing there is a high prevalence of excessive screen time among under five children. Increased parents screen usage consequently affected the children's screen time and sleep quality. Parent to child interaction could play a major role in reducing the duration of screen time and proper growth and development of child.

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