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Original Research Article

Impact of mobile use amongst children in rural area of Marathwada region of Maharashtra, India

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ABSTRACT

Background: A major source of sedentary behavior in young people is screen time, which refers to time spent watching television or movies, playing video games, using computers and using mobiles. Excessive screen time in young children is associated with obesity, aggressive behavior, and may negatively impact attention span, language development, and cognitive development. Thus, fostering appropriate screen time habits in children may have important implications for health and wellness throughout life. The study was conducted to assess the pattern of mobile use and reasons behind the mobile use along with the various effects of mobile amongst the rural children.
Methods: The present cross sectional study was conducted in the department of Paediatrics OPD at tertiary care teaching institute. All the children attending the department of Paediatrics OPD below the age of 15 years were included in the study during the period of Jan. 2017 to March 2017. A total of 450 children were enrolled in the study.
Results: In the present study, 277 (61.5%) participants were boys and 173 (38.5%) were girls child. 414 (92.1%) parents were using mobile phones and 350 (77.8%) parents had smart phones. Majority 194 (43.1%) of the children were using mobiles for 1-3 hours followed by 130 (28.8%) children those who used mobile for more than 4 hours. Physical morbities like decreased physical activity in 189 (45.8%) children, laziness in 143 (34.7%) children, pain in fingers and wrist in 76 (18.5%) and eyes symptoms in 148 (35.7%) children. While mental issues faced were, throwing tantrums if mobile not given in 187 (45.3%) children, not obeying parents 110 (26.6%), reduced grades in school 89 (21.4%).
Conclusions: The study concluded that the use of mobile phones by young generation has increased resulting physical, social and psychological impact. It's the role of family to regulate the use and guide the children for proper usage of mobile phones.

Keywords: Addiction, Children, Mobile use, Rural area, Screen time

INTRODUCTION

A major source of sedentary behavior in young people is screen time, which refers to time spent watching television or movies, playing video games, using computers and using mobiles. Pediatric organizations recommend no more than 1–2 hours of daily screen time for children aged 2–5 years and discourage screen time for children younger than the of age 2.[1,2] Unfortunately, many children are not meeting these recommendations. Excessive screen time in young children is associated with obesity, aggressive behavior, and may negatively impact attention span, language development, and cognitive development. Thus, fostering appropriate screen time habits in children may have important implications for health and wellness throughout life. Several intrapersonal (e.g., age), interpersonal (e.g., parental mobile use, parental rules), and physical

environment factors within the home setting are related to screen time among school-aged children and youth.[3]

Insufficient sleep, delayed sleep-wake behavior, and sleep disturbances are common among youth and adolescents around the world. In addition, 77% of adolescents reported having sleep problems, with waking up feeling un-refreshed (59%) and difficulty falling asleep (42%) most commonly reported. One of these environmental sources is the use of screen-based activities that often delay bedtime or truncate total sleep time (TST). Additional research has shown that light has an acute alerting effect in which the dose, exposure duration, timing and wavelength of light evokes an alerting response among humans.[4]

Most of the recent research on children's use of technology and their online activities focus mainly on older children and teenagers.[5] Livingstone and Haddon (2008) argued that since use amongst younger children is growing fast and considering that they are more vulnerable to the inherent risk due to their lack of maturity and coping strategies, it is imperative for researchers to study children younger than 12 years old. Several research studies on children and computing have shown that children use home computers for various purposes, including leisure activities (e.g. game playing and web surfing) and school work.[6] The most popular uses of the internet for 5–9 year olds were playing games (20.5%), homework (11.7%) and email (11.1%). There are limited studies on young children's gender differences in terms of technological and internet usage. A few studies that looked at the effects of gender, focused on boys and girls interactions with computers. Some studies indicated that gender has little impact on these interactions. Perceived differences may come from gender stereotypes and not on actual intellectual differences.[7]

The study was conducted to assess the pattern of mobile use and reasons behind the mobile use along with the various effects of mobile amongst the rural children.

METHODS

The present cross sectional study was conducted in the department of Paediatrics OPD at tertiary care teaching institute. All the children attending the department of Paediatrics OPD below the age of 15 years were included in the study during the period of Jan. 2017 to March 2017. A total of 450 children were enrolled in the study. Informed consent was taken from the parents attending the children. The child was and parents were explained about the purpose of the study and data was collected in the predesigned and pretested questionnaire.

Inclusion criteria

- Children below the age of 15 years using mobile phone for any purpose
- Parents giving consent and ready to participate in the study.

Exclusion criteria

- Children below the age of 3 years
- Mentally challenged children.

RESULTS

Table 1 shows that 277 (61.5%) participants were male and 173 (38.5%) were girl child. While the children were 3-6 years 79 (17.5%), between 7-9 yrs were 201 (44.7%), between 10-12 were 108 (24.0%) and 62 (13.8%) belonged to 13-15 age group.

Table 1: Distribution of children according to the socio-demographic factors.

Socio-demographic factors	Factor	No. (%)
Child's gender	Male	277 (61.5%)
	Female	173 (38.5%)
Child's age (in years)	3 - 6	79 (17.5%)
	7 - 9	201 (44.7%)
	10 - 12	108 (24.0%)
	13 - 15	62 (13.8%)
Type of family	Nuclear	121 (26.88%)
	Joint	234 (52%)
	Extended	95 (21.11%)
Fathers education	Illiterate	58 (12.88%)
	Primary	162 (36.0%)
	Secondary	140 (31.11%)
	Higher	76 (16.88%)
	Graduation	14 (3.11%)
Mothers education	Illiterate	70 (15.55%)
	Primary	191 (42.44%)
	Secondary	150 (33.33%)
	Higher	34 (7.55%)
	Graduation	5 (1.11%)
Socio-economic classification	Class - I	13 (2.8%)
	Class – II	36 (8.0%)
	Class – III	104 (23.1%)
	Class – IV	175 (38.8%)
	Class – V	122 (27.1%)

Majority 121 (26.88%) of the children belonged to joint family and 121 (26.88%) children belonged to nuclear family. More than 87% fathers were educated and 85% of mothers were educated. In the present study 122 (27.1%) children were from class - V of socioeconomic class, 175 (38.8%) class- V and 13 (2.8%) class- I.

It was seen from Table 2 that 414 (92.1%) parents used mobile phones and 350 (77.8%) parents had smart phones. While 325 (72.2%) parents have internet access on their mobiles. 323 (71.7%) parents used mobile for 1-3 hours and 61 (13.5%) parents were using mobiles for more than 4 hours per day.

Table 2: Distribution of parents according to the mobile use.

	Factor	No. (%)
Does Parents have Mobile	Yes	414 (92.1%)
	No	36 (7.9%)
Does Parents have Smart Mobile	Yes	350 (77.8%)
	No	100 (22.2%)
Does Parents have internet access on mobile	Yes	325 (72.2%)
	No	125 (27.8%)
How many hours parents use mobile	<1 hour	66 (14.6%)
	1-3 hours	323 (71.7%)
	> 4 hours	61 (13.5%)

Table 3 shows that 433 (96.3%) children were using their parents or relative's mobiles. The study showed that only 36 (8.0%) children have never used mobiles. Majority 194 (43.1%) of the children were using mobiles for 1-3 hours followed by 130 (28.8%) children those who used mobile for more than 4 hours. Majority 176 (42.5%) of the children were using mobile for playing games, followed by 145 (35.0%) watching U-tube videos and 104 (25.1%) children were surfing internet. Following were the reasons to give mobile to children, majority 207 (50.0%) cases mobile was given to tackle with the tantrums of not giving mobile, 154 (37.1%) cases to keep child engaged and in 133 (32.1%) children, that doesn't to parents not to use mobile.

Table 3: Distribution of children according to mobile use.

	Factor	No. (%)
Whose mobile does child use	Own mobile	17 (3.7%)
	Parents/relatives mobile	433 (96.3%)
How many hours child uses mobile	Do not use mobile	36 (8.0%)
	<1 hour	90 (20.0%)
	1-3 hours	194 (43.1%)
	> 4 hours	130 (28.8%)
What does he use mobile for (Multiple responses) (n = 414)	Internet surfing	104 (25.1%)
	Playing games	176 (42.5%)
	Listening to music	74 (17.8%)
	Watching U-tube	145 (35.0%)
	Other	92 (22.7%)
Why mobile is being given to child (n = 414)	To keep Child engaged	154 (37.1%)
	Due to his tantrums for mobile	207 (50.0%)
	It's helpful for him in academics	7 (1.6%)
	To introduce him to technology	21 (5.1%)
	To make show off in society	28 (6.7%)
	Child doesn't listen	133 (32.1%)

The various morbities observed in the present study as shown in Table 4, Physical morbities like decreased physical activity in 189 (45.8%) children, laziness in 143 (34.7%) children, pain in fingers and wrist in 76 (18.5%) and eyes symptoms in 148 (35.7%) children. While mental issues faced were, throwing tantrums if mobile not given in 187 (45.3%) children, anxious child while playing games 182 (44.1%), reduction in sleep 134 (32.5%) and increased irritability in 120 (29.1%) students. Following social problems were noted, not obeying parents 110 (26.6%), reduced grades in school 89 (21.4%), 45 (11.0%) not mixing in friends and 16 (0.4%) children were caught watching porn.

Table 4: Distribution of children according to the effects of mobile use.

	Factor (n* = 414) (*multiple responses)	No. (%)
Physical problems	Eye strain	82 (19.8%)
	Eye watering	66 (15.9%)
	Laziness	143 (34.7%)
	Pain in fingers and wrist	76 (18.5%)
	Reduction in physical activity	189 (45.8%)
Mental problems	Anxious	182 (44.1%)
	Irritable	120 (29.1%)
	Reduction in sleep	134 (32.5%)
	Throwing tantrums if mobile not given	187 (45.3%)
Social problems	Not mixing with friends	45 (11.0%)
	Fighting with friends	30 (7.3%)
	Watching porn sites	16 (0.4%)
	Not obeying parents	110 (26.6%)
	Reduction in school grades	89 (21.4%)

DISCUSSION

In the present study 277 (61.5%) participants were male and 173 (38.5%) were girl child. While the children were 3-6 years 79 (17.5%), between 7-9 yrs were 201 (44.7%), between 10 -12 were 108 (24.0%) and 62 (13.8%) belonged to 13-15 age group. Majority 121 (26.88%) of the children belonged to joint family and 121 (26.88%) children belonged to nuclear family. More than 87% fathers were educated and 85% of mothers were educated. In the present study 122 (27.1%) children were from class- V of socioeconomic class, 175 (38.8%) class-V and 13 (2.8%) class- I. These finding are similar to study by Valerie Carson et al[3], they found that over half (53.5%) of the children were male and the average age was 41 months or 3 years. For screen time, 13.6% engaged in >2 hour/day and 43.5% engaged in >1 hour/day.

In the present study 414 (92.1%) parents used mobile phones and 350 (77.8%) parents had smart phones. While 325 (72.2%) parents have internet access on their mobiles. 323 (71.7%) parents used mobile for 1-3 hours and 61 (13.5%) parents were using mobiles for more than

4 hours per day. In the present study 433 (96.3%) children were using their parents or relatives mobiles and only 36 (8.0%) children have never used mobiles. Majority 194 (43.1%) of the children were using mobiles for 1-3 hours followed by 130 (28.8%) children those who used mobile for more than 4 hours. Majority 176 (42.5%) of the children were using mobile for playing games, followed by 145 (35.0%) watching U-tube videos and 104 (25.1%) children were surfing internet. Following were the reasons to give mobile to children, majority 207 (50.0%) cases mobile was given to tackle with the tantrums of not giving mobile, 154 (37.1%) cases to keep child engaged and in 133 (32.1%) children, that doesn't to parents not to use mobile. Similarly, a study by Muduli JR et al found that nearly 68% of the total respondents are spending more than 6 hours per day with their technological devices and enjoy the services out of them.[8] Where 20% participants are using the gadgets for 4-6 hours per day and 7% of them are using these for 2-4 hours. The number of participants those spend 1-2 hours per day with their gadgets was very less i.e. only 19.5%.

In study by Subrahmanyam K et al observed that, although playing specific computer games has immediate positive effects on specific spatial, iconic, and attentional skills used by the game.[9] In a survey they found that people with gadget addiction display several troubling symptoms, such as the fear of missing something important when offline; a detachment from close people and favorite activities in favor of gadgets; headaches, poor vision, social anxiety.[10] In the study by Cerutti R[11] results highlighted the potential impact of excessive internet and mobile use, which ranges from different types of headache to other somatic symptoms.

The various physical morbities like decreased physical activity in 189 (45.8%) children, laziness in 143 (34.7%) children, pain in fingers and wrist in 76 (18.5%) and eyes symptoms in 148 (35.7%) children were observed. While mental issues faced were, throwing tantrums if mobile not given in 187 (45.3%) children, anxious child while playing games 182 (44.1%), reduction in sleep 134 (32.5%) and increased irritability in 120 (29.1%) students. Following social problems were noted, not obeying parents 110 (26.6%), reduced grades in school 89 (21.4%), 45 (11.0%) not mixing in friends and 16 (0.4%) children were caught watching porn. Similar findings were noted by Hale L in their study of the 12 looking at TST or delayed bedtime, 10 (83%) found a statistically significant association between either shortened TST or delayed bedtime.[4] Of the studies that estimated the amount to which sleep duration was shortened. In a study by Muduli JR observed that the over use of the technological devices by the respondents has a greater effect on the anxiety and stress level of them.[8] it is clear that there is direct relation between the use of gadgets and the level of anxiety and stress. It shows that the degree of the anxiety or nervousness is normal in case of the low users of the devices and it increase with the increase of time period of use from mild to severe. Similarly, in a study by Saruji MAM in their study found that Technology enriches basic skills and physical activity, keeping track of children using the GPS trackers within the phone.[12] On the contrary, loss of privacy, lessened ability to multitask, health-related issues like obesity and children's sensory skill development and changing social norms like children feel lonely and depressed. Agarwal V in a survey among adolescents, it was found that among school going adolescents, the incidence of technology addiction (internet and mobile addiction) was moderate and females were at lower risk to develop technology addictions like internet addiction.[13]

Kim R conducted a research to examine the relationships among mobile phone use, anxiety, and parental attitudes toward child-rearing in a convenience sample of 351 grade 6 elementary school students.[14] Mobile phone use was greater in girls than in boys, and the difference was statistically significant. Mobile phone use was positively correlated with anxiety, and it was negatively correlated with parental child-raising attitudes. Similarly Lee JE studied a total of 1,125 students at baseline were included in this study after excluding those who already had poor sleep quality or short sleep duration in the previous year.[15] A generalized estimating equation was used to analyze the data. High mobile phone addiction (mobile phone addiction score >20) increased the risk of poor sleep quality but not short sleep duration.

CONCLUSION

The present study concluded that the use of mobile phones by young generation has increased. The reasons are parental and social. The excessive use of mobile phones is having its physical, social and psychological impact. It's the role of family to regulate the use and guide the children for proper usage of mobile phones.

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