

ASSOCIATION BETWEEN GADGET USE AND CHILD ADJUSTMENT IN CHILDREN OF 6 TO 18 YEARS OF AGE

Paediatrics

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ABSTRACT

Background: The time children spend using digital devices is increasing rapidly with development of new portable and instantly accessible technology. It can be positively related to cognitive and academic skills but negatively related to social and psychological development. Since mobile use amongst younger children is growing fast it is imperative for researchers to study younger children.

Objectives:

1. To assess the child adjustment in four subscales (emotional symptoms, conduct problems, hyperactivity/inattention, peer problems)
2. To study the pattern (demographic, parents educational attainment, parent child interaction), reason behind gadget use and impact of mobile use in children
3. Comparison between impact of gadget use in children of rural and urban area.

Methodology: This study was a cross sectional study which was conducted on children between the age of 6 to 18 years of age admitted in Bapuji Child Health Institute and Research Center and Chigateri General Hospital, Davangere. A total of 374 children were selected. Self-report questionnaire (SDQ questionnaire) in local language was given to parents of children admitted and are asked to complete the questionnaire.

Results: Majority were from rural areas belonging to lower middle socioeconomic status. Majority of them using it to watch YouTube followed by playing games and reason for use being their tantrums. >3 hours of gadget use was seen in children between 14-18 years of age and had a male preponderance. Findings of our study shows that frequent use of mobile device is associated with emotional/ behavioural problems. **Conclusion:** It is very important for parent, caretakers and teachers to reduce gadget dependency by limiting their session time or enrolling them in extra classes so that they can do other social activities.

KEYWORDS

Screen time; Gadget use; Child adjustment; SDQ score.

INTRODUCTION

In the modern era, digital devices have become an integral part of our daily lives, and their usage has increased exponentially across all age groups, including children. The term "screen time" refers to the amount of time spent using digital devices such as smartphones, tablets, computers, and televisions. While these devices offer numerous benefits, including access to educational resources and entertainment, excessive screen time has been associated with various health concerns, particularly in children.¹

METHODOLOGY

Source of data:

All children between the age of 6 to 18 years of age admitted in Bapuji Child Health Institute and Research Center and Chigateri General Hospital, Davangere.

Study Design: Cross-sectional Study.

Study Period: May 2023 to November 2024

Sample Size: 374

Method of Collection of Data:

Inclusion criteria:

Children from 6 to 18 years of age using gadget for any purpose.

Exclusion Criteria:

Children with intellectual disability.

METHOD:

Informed consent was taken from parents of all children to be enrolled in the study with written consent in the language parents understand.

Self-report questionnaire (SDQ questionnaire) in local language was given to parents of children admitted and are asked to complete the questionnaire.

Statistical Analysis:

- Categorical data was represented in the form of frequency and percentage. Association between variables were assessed with Chi Square Test.
- P value of <0.05 was considered statistically significant.

RESULTS

Table – 1: Number Of Hours Usage & Total SDQ

How Many Hours Does Child Use	Total Score SDQ						Chi Square test	
	Normal		Borderline		Abnormal		χ^2 Value	P Value
	No	%	No	%	No	%		
<1 hour	239	98	2	1	3	1	276.32	p<0.001
1-3 hours	36	46	38	48	5	6		
> 3 hours	3	6	23	45	25	49		
Total	278	74	63	17	33	9		

Table 1 depicts the relation between hours of their gadget use and total SDQ score. It is found that those 25 children (49%) who have spent >3 hours with gadget had an abnormal SDQ score and 239 of the subjects (98%) with less than 1 hour of use had normal SDQ score.

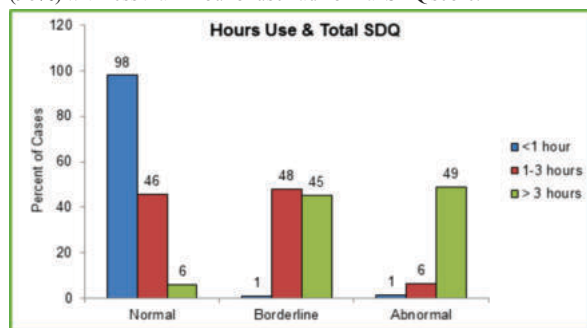
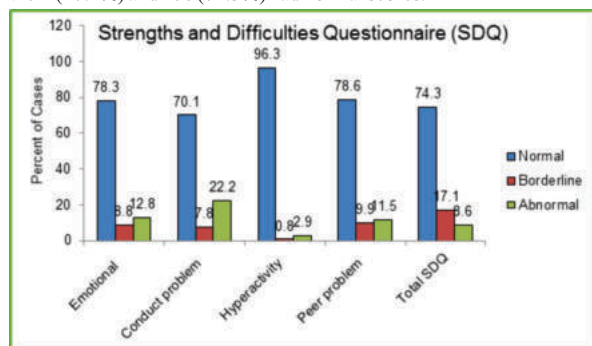


Table – 2: Strengths and Difficulties Questionnaire (SDQ)

Strengths and Difficulties Questionnaire (SDQ)	Clinically significant problem in this area is unlikely (Normal)		May reflect Clinically significant problems (Borderline)		Substantial risk of Clinically significant problem in this area (Abnormal)	
	No	%	No	%	No	%
Emotional scale	293	78.3	33	8.8	48	12.8
Conduct problem scale	262	70.1	29	7.8	83	22.2
Hyperactivity scale	360	96.3	3	0.8	11	2.9
Peer problem scale	294	78.6	37	9.9	43	11.5

Total SDQ	278	74.3	64	17.1	32	8.6
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Table 2 shows Total SDQ score among study subjects and it was found that abnormal SDQ was seen in 32 of them (8.6%), borderline in 64 of them (17.1%) and 278 (74.3%) had normal scores.



DISCUSSION

In the current study, we found that using mobile devices, such as smartphones was associated with a higher likelihood of behavior problems. Frequent mobile device use is likely to increase children's social isolation, and hinder opportunities for social interaction with family, friends, that benefits the development of social competence, resulting in emotional/behavioral problems

Although in some cases new media can foster communication and the generation of electronic relationships, it is also possible that the development and spread of new media devices may decrease children's social interaction. Social interaction throughout childhood, primarily face-to-face, is a core factor impacting on the development of children's social competence. The results of our study delineated the study subjects were distributed between 10-13 years (39.6%) with male predominance (61.2%) as compared to females (38.8%). 70.1% of them were from rural and 29.9% from urban.

Nuclear families were predominant (78.3%) followed by joint family (21.4%). The findings of a study conducted in rural western India, reported average time spent in front of a screen among children was approximately 2.7 ± 1.7 h, Shah et al.,⁷⁶ 2019. In contrast to these findings in our study children were reported to use digital devices every day for <1 hour (65.2%) and 1-3 hours/day (21.1%).

Primary education was standard of education which was comparable between father (55.1%) and mother (33.4%) followed by secondary education. 2.1 % of the father's and 9.6% of the mother's were illiterates. Illiteracy was defined as inability of a person to read or write either because of inadequate reading skills or lack of knowledge.

The findings of the study Carson et al.,⁷⁷ suggest that parental cognitive factors may be of particular relevance. The observation that parental cognitions explained the most variance in screen time, particularly in 0- to 3-year-olds, is likely due to the control parents have over what young children are exposed to at home. Thus, increasing parental awareness regarding the recommended levels of screen time, changing parental attitudes regarding children's screen time engagement, as well as increasing parental self-efficacy to overcome barriers and say no to children's request to engage in screen time may be potential strategies for future interventions.

Reason for usage was due to his/ her tantrums (65.2%), followed by academic use (42.2%), to keep child engaged was 24.1%, to introduce to technology (7%) and others being (5.9%). This was similar to Bansal et al.,⁶ where (50.0%) cases mobile was given to tackle with the tantrums of not giving mobile, 37.1% cases to keep child engaged.

Gadget use of more than 3 hrs / day was seen maximum in 14-18 years of age group (53%) followed by 10-13 years (33%) and 6-9 years (14%).

ASSOCIATION BETWEEN GADGET USE AND CHILD ADJUSTMENT:

SDQ score showed clinically significant values for conduct disorders (22.2%) followed by emotional (12.8%), peer problems (11.5%) and hyperactivity problems (2.9%).

Significant emotional, conduct and peer problems was seen in children

between 14-18 years of age unlike hyperactivity which was more in 6-9 years of age. Males were predominant in all domains and children belonging to rural area had significant SDQ scores but this cannot be considered as the total male population and rural population was higher in this study. This was similar to findings of Hosowaka et al.,⁵ where regular use of mobile devices without educational purpose was significantly linked to conduct problems and hyperactivity/inattention relative to non-regular use, regular use of mobile devices, including for educational purposes, was not significantly linked to any emotional/behavioral problems. Therefore, routine frequent use of mobile devices in the absence of educational content appears to be related to behavioral problems in childhood.

It is very important for parent, caretakers and teachers to reduce gadget dependency by limiting their session time or enrolling them in extra classes so that they can do other social activities. This can improve cognitive and psychomotor domain.

It is time for Govt. to replace and refrain the policies related to issue of gadget dependency among children by having focussed discussion with related ministers.



Fig. 1: Shows Mobile Usage By Children



Fig. 2: Shows Parent Using Mobile

CONCLUSION

Abnormal SDQ score was seen in children of age group 14-18 years using gadget for >3 hours. Most of them had conduct problems followed by emotional problems. Findings of our study shows that frequent use of mobile device is associated with emotional/behavioural problems.

SUMMARY

1. Total SDQ score among study subjects showed abnormal in 32 of them (8.6%), borderline in 64 of them (17.1%) and 278 (74.3%) had

normal scores.

2. It is seen that 27(53%) of the children who had screen time of >3 hours were between 14- 18 years, were mostly males (61%) and were from rural areas, that is 38 (75%) of them.
3. 30 children (62%) who had abnormal SDQ score in all domains except hyperactivity were from 14-18 years age group and 5 children (46%) who had abnormal SDQ score in hyperactivity domain were from 6-9 years age group

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