

Original Research Article

Assessing the usage of screen based media and screen time among adolescents in Mysuru: a cross-sectional study

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ABSTRACT

Background: Media is one of the important parts of the life of school children, especially those aged between 13 to 17 years. It has both positive and negative impacts on children. It affects both physical and mental health; there will be a prominent impact on their studies also. Nowadays everyone has the accessibility of television, mobile, etc in India. This study mainly aims to assess the impact of screen-based media (SBM) and screen time among middle adolescents and the association of socio-demographic status with the usage of SBM.

Methods: A cross-sectional study was conducted in Government and Private schools of Mysuru district from November to December 2019. The study included 180 school children between the age group of 13 to 17 years through simple random sampling. A semi-structured interview questionnaire was used.

Results: Mobile formed the maximum used SBM. Out of the total screen time, time contributed by television 90.5%, mobile 95.6%, and both television and mobile 91.7% will be more followed by other SBM. The proportion of children having the screen time of maybe 3 hrs was found to be 25.6% and more than 3 hrs was 5.9% among the total study population. There is an association between SBM usage and the socio-demographic status i.e. age, type of family, father's education, and father occupation with the statistical significance of p value <0.05.

Conclusions: According to the current study, there is a high proportion of school children using SBM. So, there is a need to create awareness regarding the use of SBM and its impact on children among parents, teachers, and children.

Keywords: Screen-based media, School children, Screen time

INTRODUCTION

Media is one of the important parts of the life of school children, especially those aged between 13 to 17 years. It has both positive and negative impacts on children. It affects both physical and mental health; there will be a prominent impact on their studies also. Nowadays everyone has the accessibility of television, mobile, etc in India, which indicates that children are accessing the internet at very younger ages. Children under 15 also using the internet as adults use over 25.¹

Digital technology has already changed the world of childhood as more and more children go online around the world. This results in an increasingly changing childhood. Adolescents aged 13 to 17 years are the most connected people. About 71% of children were online users when compared with 48% of the total population all over the world. Children under the age group of 13 to 17 years account for an estimated 1 in 3 internet users around the world.²

Smartphone's are directly affecting the physical and mental growth of children. These smartphone's are

fuelling a "bedroom culture" with internet access for many children all over the world, which results in children becoming more personal, more private, and less supervised. For most children, the use of screen-based media (SBM) is one of the solutions for their depression or family problems at home, which results in a rise in the screen time (ST) and SBM use.³

The purpose of this study mainly aims to assess the impact of SBM and ST among school children and to assess the association of socio-demographic status with the usage of SBM.

METHODS

A cross-sectional study was conducted in the government and private schools of Mysuru district, for the period of two months from November to December 2019.

The sample size was calculated by considering the prevalence of 68% of adolescents uses more SBM, who have ST more than the recommended ST.

Assuming at least a 10% error with the prevalence rate of 68% among school children, a sample size of 180 children was calculated. A total of 180 children were selected by simple random sampling from the government and private schools of Mysuru district. Children who come under the age group of 13 to 17 years were included. Children who were not willing to participate in the study were excluded from the study.

The study was conducted in the government and private schools of Mysuru district i.e. Haginavalu, Ajjipura, Hura and Mysuru urban area. There was no refusal from the study participants. In each class, 30 children were selected, among them the equal distribution of boys and girls was taken care of. Hence, there were 15 boys and 15 girls from each class.

A semi-structured pre-tested and validated questionnaire was used to conduct the study. The data was collected through the interview technique by using an SBM questionnaire. The questionnaire mainly included the socio-demographic data in part-A like name, age, gender, type of family, number of family members, father's education, father's occupation, etc. Part-B, this included the usage of SBM and ST of television, mobile, tablet, computer or desktop, and laptop. The children were asked time spent on these SBM.

Ethical approval

This study was approved by the Institutional Ethical Committee.

Statistical analysis

The data was entered in the MS Excel sheet followed by analysis using SPSS version 16.

Socio-demographic data like age, gender, education, and occupation, etc. and its association with SBM usage was done by using the chi-square test with the statistical significance of p value <0.05.

The use of SBM and ST among school children was represented by using the arithmetic mean, standard deviation and percentages with bar diagram, pie chart at the statistical significance of p value <0.05.

RESULTS

A total of 180 school children have participated in the study. The study included 45.6% of males and 54.4% of females, with 81.7% of adolescents less than 16 years of age. Children living in nuclear families comprised 50% in total and those living with the number of four members in the family were 77.8%. Fathers of 28.9% of children had completed their high school, 25.6% completed diploma and 10% were illiterates. Fathers of 71.1% of children were farmers and clerical workers, 0.6% were unemployed (Table 1).

Table 1: Distribution of adolescents according to demography (n=180).

Variable	Frequency (%)
Age (in years)	
13 to 15	147 (81.7)
16 to 17	31 (17.2)
18 to 19	2 (1.1)
Gender	
Male	82 (45.6)
Female	98 (54.4)
Type of family	
Nuclear	90 (50.0)
Extended	90 (50.0)
No of family members	
Three	6 (3.3)
Four	140 (77.8)
Five or more	34 (18.9)
Fathers education	
Profession	4 (2.2)
Diploma	46 (25.6)
High school	52 (28.9)
Middle school	41 (22.8)
Primary school	19 (10.6)
Illiterate	18 (10.0)
Fathers occupation	
Profession	1 (0.6)
Semi profession	35 (19.4)
Clerical/farmer	128 (71.1)
Skilled worker	15 (8.3)
Unemployed	1 (0.6)

The proportion of children having the ST of maybe 3 hrs was found to be 25.6%, less than 3 hrs was 41.8% and more than 3 hrs was 5.9% among the total study

population. The children were enquired about the ST they spent by watching television. It was 36.1% maybe 3 hrs, 10% more than 3 hrs and 44.4% less than 3 hrs. The use of mobile was 33.9% maybe 3 hrs, 1.7% more than 3 hrs and 60% less than 3 hrs. Computer use was 21.1% less than 3 hrs, 6.7% for about 3 hrs. The use of tablet devices was 7.2% less than 3 hrs. Among the study participants, no one uses a laptop (SBM 5) (Figure 1).

Table 2: Association between socio-demographic status and the use of SBM.

SBM	Variable	X ²	OR (95% CI)	P value
SBM 1	Age	12.98	10.91	0.043
	Sex	4.80	4.84	0.187
	Type of family	13.02	13.4	0.005
	No. of family members	6.43	5.85	0.376
	Fathers education	38.2	37.2	0.001
	Fathers occupation	27.2	28.3	0.007
SBM 2	Age	56.81	42.65	0.000
	Sex	1.742	1.74	0.628
	Type of family	6.89	6.95	0.075
	No. of family members	9.4	10.7	0.152
	Fathers education	75.4	49.8	0.000
	Fathers occupation	16.7	18.5	0.160
SBM 3	Age	15.54	24.21	0.004
	Sex	0.107	0.107	0.948
	Type of family	0.136	0.136	0.934
	No. of family members	6.6	8.3	0.158
	Fathers education	23.9	33.0	0.08
	Fathers occupation	6.06	5.4	0.640
SBM 4	Age	3.146	5.48	0.207
	Sex	1.23	1.27	0.266
	Type of family	0.74	0.75	0.388
	No. of family members	1.64	1.92	0.439
	Fathers education	5.4	6.8	0.361
	Fathers occupation	4.8	4.4	0.306

The association of socio-demographic status with the use of SBM among school children was mainly seen with the age factor, type of family, father education and father occupation with the statistical significance of p value <0.05 among the study participants (Table 2).

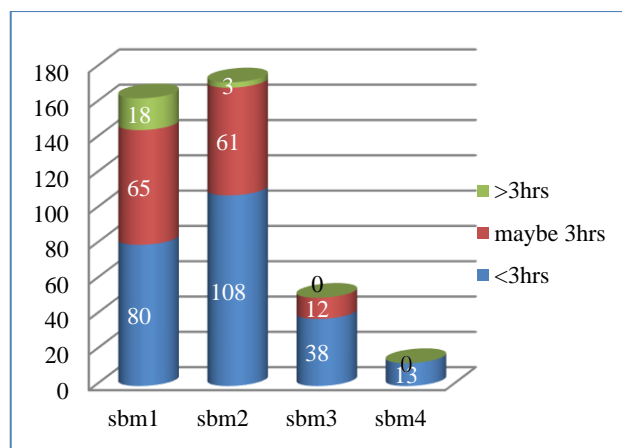


Figure 1: ST of SBM.

DISCUSSION

Summary findings

In this study, we observed that mobile formed the maximum used SBM. Out of the total ST, time contributed by television 90.5%, mobile 95.6%, and both television and mobile 91.7% will be more followed by other SBM. The proportion of children having the ST of maybe 3 hrs was found to be 25.6% and more than 3 hrs was 5.9% among the total study population. There is an association between SBM usage and the socio-demographic status i.e. age, type of family, father's education, and father occupation with the statistical significance of p value <0.05.

Impact of ST on adolescents' mental health

Adolescents who spent more time on media (including social media and electronic devices such as smartphone's) were more likely to report mental health issues, so there is a need to create awareness among parents, teachers, and children. The average of ST was 83.8±55.0 min (27.4% of ST) for children with high ST, 82.8±50.5 min (39.8% of ST) for children with medium ST, and 77.2±59.4 min (71.3% of ST) for those with low ST. However, relatively the ST percentage of total ST was significantly higher among children with low ST (p<0.01). Significantly higher ST was found in children with a migration background (p<0.01), while underweight children had significantly less ST (p<0.05) which are the important reasons for more ST.³ In two nationally representative surveys of U.S. adolescents in grades, 8 through 12 (n=506,820) and national statistics on suicide deaths for those ages 13 to 18, adolescents' depressive symptoms, suicide-related outcomes, and suicide rates increased between 2010 and 2015.⁴

Impact of SBM on school performance

Madigan et al reveals that screen exposure time and media content had adverse effects on school performance.

Screen exposure had an indirect effect on poor school performance through increased sensation-seeking behavior among children. Viewing more movies had indirect effects on poor school performance through an increase in substance use and sensation-seeking behavior and it also leads to school behavior problems with other mental illnesses like depression, anxiety, etc. All type of SBM directly affects the sleeping pattern of the children, which in turn affects their education and quality of life.⁵

Impact of ST on sleep

According to systematic reviews of the literature reveal that most studies find an adverse association between SBM consumption and sleep health, primarily via delayed bedtimes and reduced total sleep duration.⁸The underlying mechanisms of these associations likely include time displacement (i.e, time spent on screens replaces time spent sleeping and other activities), psychological stimulation based on media content and the effects of light emitted from devices on circadian timing, sleep physiology, and alertness.^{6,7}

In this study, we can see that SBM and ST directly impacts the mental health of adolescent and school-going children, school performance, and sleep. The important reason for the high SBM usage is due to the increased accessibility and availability of electronic devices even in lower-middle-income households. So, here we can also see the association of socio-demographic status with the use of SBM among the children.

CONCLUSION

The study shows that the high proportion of children having ST which is more than the recommended ST for children i.e. up to 2hrs for adolescents as per American Academy of Paediatrics.¹⁰ In current study 91.7% of children use both television and mobile with the ST up to 3 hrs. For children, place consistent limits on the time spent using media, and the types of media, and make sure media does not take the place of adequate sleep, physical activity and other behaviors essential to health. In this study, we find the association of socio-demographic status with the use of SBM among school children was mainly seen with the age factor, type of family, fathers' education and father's occupation.

According to the current study, there is a high proportion of school children use SBM. So, there is a need to create awareness among parents, teachers, and children regarding the use of SBM and its impact on children. And it is important to educate children about the importance of physical activity, reading books, and involving in other healthy habits rather than leading a sedentary lifestyle by using SBM. So that it helps in improving both the mental and physical health of the children.

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