



## STUDY OF SCREEN TIME AND OBESITY AMONG SCHOOL GOING ADOLESCENTS OF URBAN SLUM, JAIPUR

<b>Dr. Srishti Jain</b>	Resident Doctor, Sawai Man Singh Medical College and Hospital, Jaipur
<b>Dr. Ravi Kant</b>	Resident Doctor, Sawai Man Singh Medical College and Hospital, Jaipur
<b>Dr. Rajeev Yadav</b>	Professor, Sawai Man Singh Medical College and Hospital, Jaipur
<b>Dr. Bhawana Vijayvergia</b>	Resident Doctor, Sawai Man Singh Medical College and Hospital, Jaipur

### ABSTRACT

**Background:** Excessive screen time for more than 2 hours daily among adolescents has been found to be associated with increased psychosocial problems, hypertension, elevated cholesterol and obesity among adolescents. **Objective:** To assess screen time of school going adolescents and to find out factors associated with it. **Material and Methods:** Observational cross-sectional study was conducted among adolescents of randomly selected co-ed school in UHTC field practice area, S.M.S. Medical College, Jaipur from January 2023 to March 2023. Students of class 9th to 12th were interviewed and their BMI was calculated using standard methods. **Results:** Out of 80 adolescents students 56.25% were boys and 63.75% were in age group > 16 years. Average screen time was 77.9+47.5 hours per week. 10% of adolescents were found over weight (BMI >25). **Conclusion:** Present study found that screen time was more than recommended in older children (> 16years) and boys were significant users of electronic devices. Overweight was present in 10% of adolescents.

**KEYWORDS :** Screen time, Adolescent, Obesity, Urban slum

### INTRODUCTION

Adolescence is treated as a transition period from childhood to adulthood. During this transitional phase, adolescents develop behavioral patterns and make lifestyles that can also affect their present and future health.<sup>1</sup> Screen time (ST) is the time spent in sedentary behaviors involving screen-based media (SBM) like watching television, playing games, and using computer and smartphones.<sup>2</sup> Around 90% of the world's population lives in developing countries and around 20% of adolescents belong to India.<sup>2</sup> Once considered a high-income country problem, overweight and obesity are now on the rise in low- and middle-income countries, particularly in urban settings. The proportion of overweight children grew from 2.1 per cent in NFHS-4 to 3.4 per cent in NFHS-5.

As recommended by the American Academy of Pediatrics excessive screen time for more than 2 hours daily has been found to be associated with increased psychosocial problems, elevated blood pressure, elevated serum cholesterol and obesity among adolescents.<sup>3</sup> The time spent on the screens significantly reduce a child's time for activities necessary for healthy development like playing, reading, storytelling and spending time with peers and family. This study was done to assess screen time and factors associated with it among school going adolescents in urban slum of Jaipur.

### OBJECTIVES

- To assess screen time among school going adolescent of UHTC field practice area, S.M.S. medical college, Jaipur
- To assess BMI among school going adolescent of UHTC field practice area, S.M.S. medical college, Jaipur
- To find out factors associated with screen time among school going adolescent of UHTC field practice area, S.M.S. medical college, Jaipur.

### METHODS

**Study Area:** UHTC field practice area, SMS Medical College, Jaipur

**Study Type and Design:** Observational type of Cross-Sectional Study

**Study Period:** January 2023 to March 2023

**Study Population:** School going adolescent of UHTC field

practice area, S.M.S. medical college, Jaipur

**Study Tool:** Self-designed semi structured proforma

### Sample size and sampling technique:

67 participants for present study were required at 95% confidence limit assuming SD of 166.2 minutes in screen time at precision of 40 minutes in SD of screen time.<sup>2</sup>

### Recruitment of Subjects:

After obtaining list of all co-ed schools in area, one school was chosen randomly. After obtaining permission from school authorities, on the day of data collection out of all students of class 9<sup>th</sup> to 12<sup>th</sup> present, 80 were willing to participate therefore data of 80 students were collected and analyzed.

### Exclusion criteria:

Students suffering from chronic diseases e.g.: any disease or drug affecting metabolism.

### Data Analysis

Quantitative variables were summarized as mean and SD and 95% CI was calculated. Categorical/nominal variables were presented as proportions. Multivariate linear regression using stepwise method was done to find independent determinants of screen time. Level of significance was kept <0.05, Med calc 19.4 software was used for all statistical analysis.

### RESULTS

Out of 80 adolescents students 45(56.25%) were boys and 63.75% were in age group >16 years. Mean age of study participants were 15.8±1.3 years. Average screen time was 77.9+47.5 hours.

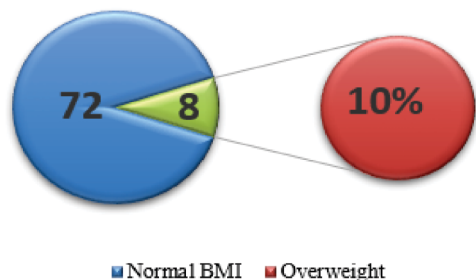
It was found that boys had significantly more (p=0.020) screen time than girls (88.7±55.2 hours & 64.±30.9 hours respectively)(Table1). 10% of adolescents were found over weight (BMI ≥25)(FIG.1). In multivariate regression analysis male gender was found independent determinant of screen time.(Table2)

**Table 1** Comparison of Screen Time with regard to General characteristics of participants

Age Group	N	Mean	SD	95% CI	p' Value
≤15	29	71.349	43.704	54.725 - 87.973	0.352
≥16	51	81.727	49.661	67.760 - 95.695	
Gender					
Male	45	88.788	55.215	72.199 - 105.376	0.020
Female	35	64.051	30.962	53.415 - 74.687	
BMI					
Normal	72	78.577	48.742	67.124 - 90.031	0.732
Overweight	8	72.459	37.485	41.120 - 103.797	
Class					
9-10	40	70.991	42.414	57.426 - 84.555	0.192
11-12	40	84.940	51.822	68.367 - 101.513	

**Table 2 Regression Analysis**

Independent variables	Coefficient	Std. Error	t	P
(Constant)	64.0511			
GENDER	24.7364	10.4201	2.374	0.0201



**Figure 1** Distribution of BMI among adolescents

**DISCUSSION**

Increased time spent on electronic media takes away the time that could have been spent on physical activity. The American Academy of Pediatrics recommends less than 2 hours of Screen Time for adolescents. Present study found that screen time was very high among adolescents. The Screen Time was more in older children (>16years), this might be because of the reason that older children have more access to mobile phones as compared to the younger children. In a study done recently by Dubey M et al found that mean (standard deviation) of the screen time was found to be 3.8 (2.77) h/day and Significant association was observed between screen time and watching television while eating.<sup>2</sup> Average screen time was much less than what was found in our study.

In our study boys were more users of electronic devices, a possible reason for this can be that there is lack of education in slum area and females are more deprived for resources than males.

In our study 10% of adolescents were found overweight whereas a similar study done by Moitra P et al found combined prevalence of overweight and obesity around 27% much higher than our study.<sup>4</sup> A very high Screen Time may lead to sedentary behaviors which may lead to overweight or obesity, a systematic review and meta-analysis revealed a positive association between screen time and overweight/obesity among adolescents.<sup>5</sup> But we did not find any significant correlation between BMI and Screen Time.

**Strength And Limitations**

Strength of our study is collection of primary data by direct interview method among adolescents of slum area regarding major adverse behavioral problem which adversely affects their health however being a single center study is one of major limiting factor of study.

**CONCLUSIONS**

Our study concluded that screen time was quite higher in adolescents specially in boys who were more users of electronic devices which maybe one of the reasons of obesity among adolescents however in our study we couldn't find any significant association between screen time and obesity.

**Recommendations**

Parents and teachers should discuss about screen time in PTM so that adolescent can understand the importance of reducing screen time and increase their outdoor activities including regular physical exercise to reduce obesity.

**REFERENCES**

1. Seema S, Rohilla KK, Kalyani VC, Babbar P(2021, May 10) Prevalence and contributing factors for adolescent obesity in present era: Cross-sectional Study. *J Family Med Prim Care.* (5):1890-1894. doi: 10.4103/jfmpc.jfmpc\_1524\_20. Epub 2021 May 31. PMID: 34195121; PMCID: PMC8208200.
2. Dubey M, Nongkynrih B, Gupta SK, Kalavani M, Goswami AK, Salve HR. (2018, December 07). Screen-based media use and screen time assessment among adolescents residing in an Urban Resettlement Colony in New Delhi, India. *J Family Med Prim Care.*:1236-1242. doi: 10.4103/jfmpc.jfmpc\_190\_18. PMID: 30613503; PMCID: PMC6293917.
3. Ilamparithi P, Selvakumar P. (2017, July 04). Association between screen time and behavioural health problems among urban and rural students in early and mid-adolescent age group. *J PediatrRes.*2017;4(07):453-460.doi: 10.17511/ijpr.
4. Moitra, P, Madan, J. & Verma, P. (2021). Independent and combined influences of physical activity, screen time, and sleep quality on adiposity indicators in Indian adolescents. *BMC Public Health* 21, 2093. <https://doi.org/10.1186/s12889-021-12183-9>
5. Haghjoo, P, Siri, G., Soleimani, E. et al. Screen time increases overweight and obesity risk among adolescents: a systematic review and dose-response meta-analysis. *BMC Prim. Care* 23, 161 (2022). <https://doi.org/10.1186/s12875-022-01761-4>