International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Screen Time Usage and Mental Well-Being Among Adolescents: A Cross-Sectional Study

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ABSTRACT

Modern kids are exposed to a wide variety of gadgets and are surrounded by technological advances, including television, cell phones, laptops, and other devices. Young people now spend more time than ever before using electronic gadgets in their daily lives and participating in screen based activities.

Aim: This study aims to examine screen time usage, mental well-being and its effect among adolescents.

Methods: A cross-sectional study was done among 100 adolescents. Responses were collected by self-structured screen time usage, Warwick-Edinburg Mental well-being scale and self-structured screen time effects scale.

Findings: The collected data were analysed by using SPSS version 20.0 and the findings revealed that 42% and 45% of adolescents were using smartphone for 1-3 hours on weekends and weekdays respectively. Forty six percent of adolescents were had low mental well-being. The excessive screen time use reported often feeling moods, headache, frustrated, poor concentration and problem in their eyes. The screen time usage were significantly associated with effects of screen usage (r= 0.27, p=0.04).

Conclusion: The study concluded that the adolescents had higher screen time usage on weekends. Increased screen time use predominantly was associated with higher negative effects.

Keywords: Screen time use, mental well-being, cell phones, adolescent

INTRODUCTION:

In today's digital age, screen time defined as the amount of time spent using digital devices such as smartphones, computers, tablets, and televisions has become an integral part of daily life, particularly among student populations. The pervasive presence of screens in educational, social, and recreational settings raises important questions about its impact on mental well-being.(1)

The concept of screen time encompasses a wide range of activities, from educational and productive tasks to entertainment and social media interactions. For students, who are increasingly reliant on digital platforms for learning and socialization, understanding the implications of screen time on their mental health is crucial. The exponential growth in digital technologies over the past few decades has transformed how students access information, communicate with peers, and navigate their academic and personal lives.(2)

Research indicates that screen time can influence various aspects of mental well-being, including emotional health, cognitive functioning, and social behaviours.(3) Excessive screen time has been

associated with symptoms of anxiety, depression, and attention disorders among adolescents and young adults.(4) Conversely, digital platforms also offer opportunities for social connection, creativity, and skill development, suggesting a nuanced relationship that warrants deeper investigation.

The significance of this study lies in its potential to inform educational practices, parental guidance, and public health initiatives aimed at promoting optimal mental well-being among students in the digital age. Understanding how different types and durations of screen time impact mental health outcomes can help educators, policymakers, and families make informed decisions regarding screen use policies and interventions.

Educationally, the implications are profound. Screen time affects cognitive processes such as attention span, information processing, and academic performance.(5) Excessive screen exposure may detract from time spent on physical activities, sleep, and face-to-face social interactions—all of which are crucial for overall well-being and development during adolescence and early adulthood.(6)

Moreover, the influence of screen time on mental health extends beyond academic settings. Social media platforms, in particular, play a significant role in shaping self-perception and social interactions among students. The pressure to maintain an idealized online persona and the constant exposure to curated images and lifestyles can contribute to feelings of inadequacy, anxiety, and social comparison .(7)

METHODS:

Study design and participants:

This cross-sectional study was conducted among school students with age group of 14 to 18 years. Informed consent was obtained from participants at the time of data collection. The participants were free to quit their participation at any time. The study was approved by the Institute Ethics Committee of Desh Bhagat University, Mandi Gobindgarh.

Study questionnaire:

A semi-structured questionnaire was used for collecting sociodemographic details and consisted of age, gender, religion, type of family, residential area, class, and specification of electronic gadgets.

Self-structured likert scale was used for the assessment of screen time usage by participants regarding the time spent by them using or viewing any digital device with a screen such as smartphone, computer, laptop, tablet, and television. 10 items scale was designed. It is 5-point scale ranging from 0 to 4 where 0 corresponds to no, 1 corresponds to <1 hour, 2 corresponds to 1-3 hours, 3 corresponds to 3-6 hours, and 4 corresponds to >6 hours.

The Warwick-Edinburgh Mental well-being scale (2006) with 14 items was used. It is 5 point scale ranging from 1 to 5, where 1 corresponds to none of the time, 2 corresponds to rarely, 3 corresponds to some of the time, 4 corresponds to often, and 5 corresponds to all of the time. Scores ranges from 14 to 70.

Statistical analysis:

The data were analysed using SPSS version 20.0. The data were checked for normal distribution using the Kolmogorov-Smirnov and the Shapiro-Wilk tests. Mean and standard deviation was used for describing normally distributed data. Inferential statistics using nonparametric tests were conducted to examine the relationship between different continuous study variables.

RESULTS:

The completion rate was 0.90 (100/110). Hence, responses from 100 participants were included in the

analysis. The mean age of study participants was 15.87 years SD: 0.79. Table 1 describes the sociodemographic variables of all the students who participated in the study. Majority 69% of the adolescents were from class 11th class, 26% adolescents were from rural area and 74% of the adolescents were from urban area, 95% adolescents were currently living with their family, 65% adolescents were belong to nuclear family, 61% of the adolescents were having gadget. 61% of the adolescents were having smartphones.

Figure 1 illustrates the mean of screen time usage score among adolescents. The mean of screen time usage during weekends was 11.32 and during weekdays, the mean was 8.65.

Table 3 illustrates that 54% of adolescents were having high mental well-being followed by 46% were having low mental well-being.

Table 4 depicts the effect of screen time usage among adolescents. They were often feeling moods, headache, frustrated, poor concentration and problem in their eyes.

Table 1: Profile of study participants (N=100)

Study variables	**n(%)**
Class	
11th	69(69)
12th	31(31)
Residential area	
Rural	26(26)
Urban	74(74)
Current living arrangement	
Living alone	02(2)
With friends	03(3)
Family	95(95)
Type of family	
Nuclear	65(65)
Joint	29(29)
Extended	06(6)
Using personal smartphone/laptop/computer/tablet	61(61)
Yes	39(39)
No	
Specification of using gadgets	
Smartphone	61(61)
Laptop	0
Computer	0
Tablet	0

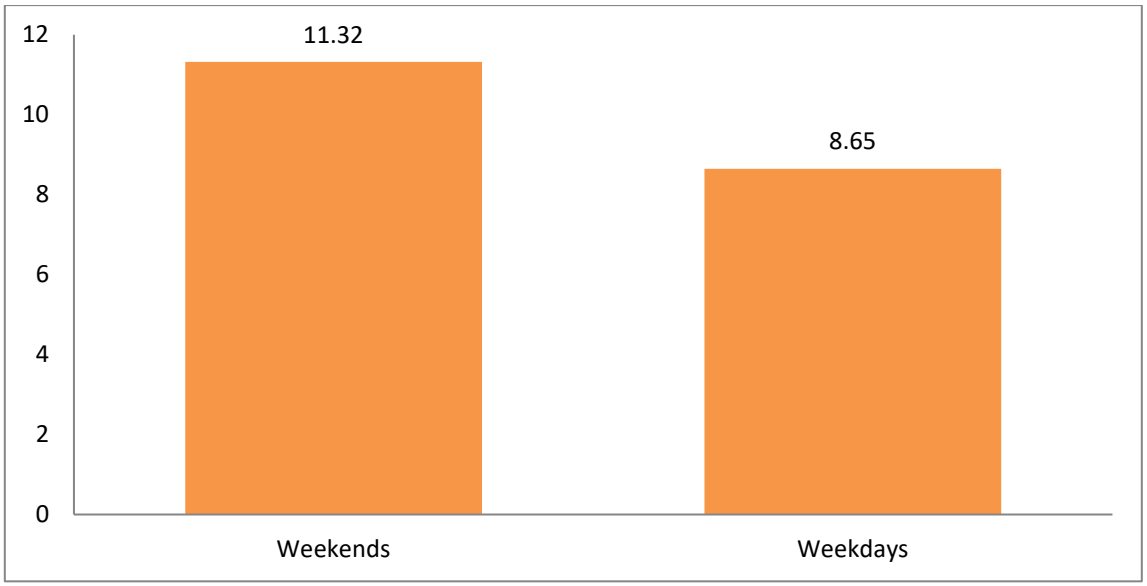

Figure 1 Mean Screen time usage among adolescents during weekends and weekdays

Table 2: Screen time usage during weekends and weekdays among adolescents (N=100)

Statement	Weekends	Mean ±SD	Mean %	Rank order	Weekdays	Mean ±SD	Mean %	Rank order
Watching T.V	**n(%)**				**n(%)**			
No	45(45)				59(59)			
<1 hr	19(19)	1.01	2.2	06	27(27)	0.58	1.3	07
1-3 hrs	27(27)	±1.06			11(11)	±0.80		
3-6 hrs	08(8)				03(3)			
>6 hrs	01(1)				00			
Using computer or laptop								
No	82(82)				86(86)			
<1 hr	14(14)	0.22	0.5	10	11(11)	0.17	0.3	10
1-3 hrs	04(4)	±0.50			03(3)	±0.45		
3-6 hrs	00				00			
>6 hrs	00				00			
Using Smartphone								
No	02(2)				08(8)			
<1 hr	32(32)	1.94	4.4	01	45(45)	1.51	3.4	01
1-3 hrs	42(42)	±0.90			39(39)	±0.85		
3-6 hrs	18(18)				04(4)			
>6 hrs	06(6)				04(4)			
Using computer, tablet, smartphone or other electronic device for educational purpose								
No	04(4)				09(9)			

<1 hr	40(40)	1.64 ±0.75	3.7	02	45(45)	1.41 ±0.72	3.2	02
1-3 hrs	45(45)				43(43)			
3-6 hrs	10(10)				02(2)			
>6 hrs	01(1)				01(1)			
Using social media via any kind of gadget								
No	26	1.20 ±0.95	2.7	04	28	0.99 ±0.81	2.2	03
<1 hr	39				50			
1-3 hrs	26				17			
3-6 hrs	07				05			
>6 hrs	02				00			
Watching movies, sports, news								
No	14	1.38 ±0.87	3.1	03	32	0.94 ±0.87	2.1	04
<1 hr	44				49			
1-3 hrs	34				14			
3-6 hrs	06				03			
>6 hrs	02				02			
Playing video games								
No	75	0.30 ±0.57	0.6	09	83	0.23 ±0.58	0.5	08
<1 hr	21				13			
1-3 hrs	03				02			
3-6 hrs	01				02			
>6 hrs	00				00			
Communicating with friends								
No	06	1.14 ±0.61	2.5	05	16	0.95 ±0.57	2.1	04
<1 hr	79				75			
1-3 hrs	12				08			
3-6 hrs	01				00			
>6 hrs	02				01			
Listening music, making videos								
No	08	1.22 ±0.66	2.7	04	26	0.91 ±0.68	2.0	05
<1 hr	66				59			
1-3 hrs	23				13			
3-6 hrs	02				02			
>6 hrs	01				00			
Using device in bed before going to sleep								
No	38	0.89	2.0	07	44	0.75 ±0.80	1.7	06
<1 hr	41				41			

1-3 hrs	18	±0.90			11			
3-6 hrs	00				04			
>6 hrs	03				00			

Table 3: Mental well-being among adolescents (N=100)

Mental well-being	Mean ± SD	n(%)
High mental well-being	>41.53 ± 8.20	54(54)
Low mental well-being	<41.53 ± 8.20	46(46)

Minimum score =14

Maximum score =70

Table 4: Effect of screen time usage among adolescents (N=100)

Statements	Mean±SD	Mean (%)	Rank order
How often do you feel mood swings?	1.21±0.72	4.0	1
How often do you feel headache?	1.18±0.64	3.9	2
How often do you feel frustrated?	1.09±0.68	3.6	3
How often do you feel poor concentration?	1.08±0.73	3.6	3
How often do you feel a problem in your eyes?	1.07±0.60	3.5	4
How often do you think increase screen time affects your physical activity?	0.97±0.78	3.2	5
How often do you feel neck pain?	0.96±0.73	3.2	5
How often do you feel sad?	0.92±0.72	3.0	6
How often do you feel lack of confidence?	0.87±0.71	2.9	7
How often do you feel that your sleep quality has been affected?	0.84±0.77	2.8	8
How often do you feel back pain?	0.84±0.73	2.8	8
How often do you feel anxious?	0.82±0.64	2.7	9
How often do you feel any change in your eating pattern?	0.62±0.76	2.0	10
How often do you feel giddiness?	0.51±0.68	1.7	11
How often do you feel any change in your weight?	0.38±0.58	1.2	12

Table 5: Correlation between screen time usage and effects of screen usage

Variables	Screen time usage r(p value)	Effects of screen time r(p value)
Screen time usage (8.65±3.56)	1	0.27(0.04)*
Effects of screen usage (14.20±10.47)	0.27(0.04)*	1

*=significant p <0.05

Table 5 indicated that screen time usage were significantly correlated with effects of screen usage (r= 0.27, p=0.04). Hence, H_0 is rejected. It concluded that if screen time use will increase then the effects of it will also increase.

DISCUSSION:

The findings of the present study revealed that mean of screen time usage during weekends was 11.32 and during weekdays, the mean was 8.65. The gadget which was used maximum by adolescents that is smartphone (61%). Similar study conducted by John R., Pokale A, Chutke A, et al. (2023) reported high prevalence of excess screen time in school going students was (83.2%) and smartphone was the most used gadget (98.9%).(8) A study conducted by Pooja et al. (2021) in rural school children found only 17% of students spending excess screen time.(9) The current results were similar to the study conducted by Nair A et al (2022) in Kerala and it was identified that 87.7% of students spending excess screen time. (10)

The current study revealed that 54% of adolescents were having high mental well-being followed by 46% were having low mental well-being. Similar study with consistent results conducted by Singh G.R, et al (2022) reported that about (46.8%) participants with poor mental well-being.(11) Another study conducted in China among college students and concluded that the excessive screen time had an effect on mental health problems.(12) Twenge J.M, et al (2018) suggested found that high users of screen time (>7 hours per day) were more likely to be diagnosed with mental health problems.(3)

In the present study, 42% of adolescents were using smartphone during weekends for 1-3 hours, 32% of them were using for <1 hour and 18% of them were using for 3-6 hours during weekends with mean ±SD score 1.94 ±0.90. Whereas during weekdays 49% and 39% of adolescents were using smartphones for <1 hour and 1-3 hours respectively with mean ±SD score 1.51±0.85. 45% and 40% of the adolescents were using gadgets during weekends for educational purpose for 1-3 hours and <1 hour respectively with mean ± SD score 1.64±0.75. 44% and 34% of the adolescent were using gadgets during weekends for watching movies, news for <1hour and 1-3 hours respectively with mean ±SD score 1.38 ±0.87. Similarly Singh G.R et al (2022) reported participants with poor mental well-being have higher total screen time (weekday: 510 min; weekend:555 min).(11)

In the present study Screen time usage were significantly correlated with effects of screen usage (r= 0.27, p=0.04). This result is consistent with other studies. A cross-sectional study conducted by Patel M, Patel S. k, et al (2022) found that the average percentage of grades obtained decreased with increasing screen time.(13) Sixty three (20.9%) students with screen time of > 3hours per day achieved an average grade. This is statistically significant with a p value of <0.001. Tajane I. A et al (2020) expressed that negative impact of excessive screen time on mental and physical health.(14)

CONCLUSION:

The current study highlights the impact of excessive screen time on mental well-being among adolescents. Increased screen time use predominantly was associated with higher negative effects.

LIMITATIONS:

This study was conducted only in secondary school students.

CONFLICT OF INTEREST:

There is no conflict of interest

REFERENCES:

1. Muppalla SK, Vuppalapati S, Pulliahgaru AR, Sreenivasulu H. Effects of Excessive Screen Time on Child Development: An Updated Review and Strategies for Management. Cureus [Internet]. 2023 Jun [cited 2024 Jul 24];15(6). Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10353947/
2. Bharadwaj S. Screen time and its impact on health. 2021 Apr 22;
3. Twenge: Associations between screen time and lower... - Google Scholar [Internet]. [cited 2024 Jul 24]. Available from: https://scholar.google.com/scholar_lookup?title=Associations+between+screen+time+and+lower+psychological+well
4. Przybylski AK, Weinstein N. A large-scale test of the Goldilocks hypothesis: Quantifying the relations between digital-screen use and the mental well-being of adolescents. Psychol Sci. 2017;28(2):204–15.
5. Rideout V. Measuring time spent with media: The Common Sense census of media use by US 8- to 18-year-olds. J Child Media. 2016 Jan 2;10:138–44.
6. Hutton J.S, Dudley J, Karus T.H, et al. Associations Between Screen-Based Media Use and Brain White Matter Integrity in Preschool-Aged Children [Internet]. [cited 2024 Jul 24]. Available from: https://jamanetwork.com/journals/jamapediatrics/fullarticle/2754101
7. Orben A, Przybylski AK. Screens, Teens, and Psychological Well-Being: Evidence From Three Time-Use-Diary Studies. Psychol Sci. 2019 May 1;30(5):682–96.
8. John R, pokale A, chutke A, narula APS, shinde S, deshmukh R. Prevalence of excess screen time among secondary school children in rural India. J Prev Med Hyg. 2024 Jan 1;64(4):E457–62.
9. Pooja: Is excessive screen time a problem among rural... - Google Scholar [Internet]. [cited 2024 Jul 24]. Available from: https://scholar.google.com/scholar_lookup?journal=Ann+Community+Health&title=Is+excessive+screen+time+a+problem+among+rural+adolescents.
10. Nair: High screen time and associated factors among... - Google Scholar [Internet]. [cited 2024 Jul 24]. Available from: https://scholar.google.com/scholar_lookup?journal=Int+J+Community+Med+Public+Health&title=High+screen+time+and+associated+factors+among+high+school+students
11. Ganesh R, Singh S, Bhargava R, Balhara YPS. Screen Time and Mental Well-Being of Students during the COVID-19 Pandemic: Findings from a Survey Among Medical and Engineering Students. Indian J Soc Psychiatry. 2022 Mar;38(1):26.
12. Wu: Impact of screen time on mental health problems... - Google Scholar [Internet]. [cited 2024 Jul 24]. Available from: https://scholar.google.com/scholar_lookup?title=Impact+of+screen+time+on+mental+health+problems.
13. Patel M, Patel SK, Suresh S, Vishwakarma K, Singh S. Relationship between screen time and academic performance in adolescents. Casp J Pediatr [Internet]. 2022 Sep [cited 2024 Jul 24];8(2). Available from: https://doi.org/10.22088/CJP.BUMS.8.2.746

14. Akulwar-Tajane I, Parmar KK, Naik PH, Shah AV. Rethinking Screen Time during COVID-19: Impact on Psychological Well-Being in Physiotherapy Students. Int J Clin Exp Med Res. 2020 Sep 24;4(4):201–16.