Indian Journal of Youth and Adolescent Health
Volume 13, Issue 1 - 2026, Pg. No. 23-27
Peer Reviewed & Open Access Journal

Cross- Sectional Study

Digital Media Use and Mental Health Outcomes Among Indian Adolescents: A Cross-Sectional Study

Moumita Das[1], Subhajit Roy[2]

[1]Associate Professor, Department of Psychology, R. G. Kar Medical College and Hospital, Kolkata, West Bengal, India
[2]Assistant Professor, Department of Community Medicine, ESIC Medical College and Hospital, Joka, Kolkata, West Bengal, India
DOI: https://doi.org/.10.24321/2349.2880.202605

I N F O

Corresponding Author :
Subhajit Roy, Department of Community Medicine, ESIC Medical College and Hospital, Joka, Kolkata, West Bengal, India
E-mail Id:
dr.roysubhajit@gmail.com
Orcid Id:
https://orcid.org/0000-0004-0356-8485
How to cite this article:
Das M, Roy S. Digital Media Use and Mental Health Outcomes Among Indian Adolescents: A Cross-Sectional Study. Ind J Youth Adol Health. 2026;13(1):23-27.

Date of Submission: 2026-05-10

Date of Acceptance: 2026-06-12

A B S T R A C T

Background: Rapid growth in digital media access has significantly transformed adolescent lifestyles in India. While digital platforms provide educational and social benefits, excessive use has been linked to adverse mental health outcomes.

Objective: To assess the relationship between digital media usage patterns and mental health among Indian adolescents.

Methods: A cross-sectional study was conducted among 600 adolescents aged 13–18 years from urban and semi-urban schools. Data were collected using structured questionnaires assessing screen time, sleep patterns, and mental health indicators (anxiety, depression, and self-esteem). Statistical analysis included correlation and regression models.

Results: High screen time (>4 hours/day) was reported by 42% of participants. Increased screen time was significantly associated with higher anxiety ($p < 0.01$), depressive symptoms ($p < 0.05$), and lower self-esteem ($p < 0.05$). Poor sleep quality mediated these outcomes.

Conclusion: Excessive digital media use is associated with negative mental health outcomes among Indian adolescents.

Keywords: Adolescents, Digital media, Mental health, Screen time, India

Introduction

Adolescence represents a crucial developmental period characterized by profound biological, cognitive, emotional, and social changes. During this stage, individuals establish patterns of behavior that may significantly influence their future health and well-being. In recent years, the rapid expansion of digital technologies has transformed the daily lives of adolescents worldwide. Smartphones, tablets, social networking platforms, video streaming services, and online gaming have become integral components of adolescents' social and educational environments. India, which is currently one of the largest digital markets globally, has witnessed remarkable growth in internet penetration and smartphone ownership among young people. According to recent national reports, internet access among adolescents

has increased substantially over the past decade, enabling greater engagement with digital media for communication, entertainment, learning, and social interaction.[1,2]

Digital media provides numerous benefits, including improved access to educational resources, opportunities for skill development, social connectedness, and enhanced communication with peers and family members. Educational applications, online learning platforms, and virtual communities have become valuable tools for academic growth and knowledge acquisition. However, excessive engagement with digital media has raised concerns among healthcare professionals, educators, and policymakers regarding its potential impact on adolescent mental health.[3]

Mental health disorders constitute a significant public health concern among adolescents. The World Health Organization estimates that approximately one in seven adolescents experiences a mental health disorder, with anxiety and depression being among the most common conditions affecting this population.[1] Emerging evidence suggests that excessive screen time and problematic social media use may contribute to psychological distress, emotional dysregulation, sleep disturbances, and reduced self-esteem.[4,5] Adolescents who spend prolonged periods engaging with digital media may experience social comparison, cyberbullying, fear of missing out (FOMO), and reduced face-to-face interactions, all of which can adversely affect psychological well-being.[6]

The Displacement Theory provides one explanation for these associations. According to this theory, excessive time spent on digital media displaces participation in beneficial activities such as physical exercise, academic engagement, family interaction, and sleep, thereby negatively influencing mental health outcomes.[7] Similarly, the Social Comparison Theory suggests that exposure to idealized portrayals of peers and influencers on social media platforms may foster feelings of inadequacy and lower self-esteem among adolescents.[8] Furthermore, the Cognitive Behavioral Model of Problematic Internet Use proposes that maladaptive patterns of digital engagement may contribute to anxiety and depressive symptoms through reinforcement of negative cognitive processes and social withdrawal.[9]

Several international studies have demonstrated significant associations between excessive screen time and adverse mental health outcomes. A systematic review by Keles et al. reported that social media use was associated with increased levels of depression, anxiety, and psychological distress among adolescents.[10] Similarly, Woods and Scott observed that adolescents engaging in frequent nighttime social media use experienced poorer sleep quality and higher levels of anxiety and depression.[11] In the Indian context, research exploring these relationships remains relatively limited despite rapid digitalization and growing concerns regarding youth mental health.

Given the increasing prevalence of digital media use and the rising burden of mental health problems among Indian adolescents, understanding the relationship between these variables is essential for developing effective public health interventions. Therefore, the present study aimed to assess digital media usage patterns and examine their association with anxiety, depression, self-esteem, and sleep quality among Indian adolescents aged 13–18 years.

Materials and Methods

- **Study Design:** Cross-sectional study conducted from January to March 2026.
- **Participants:** 600 adolescents aged 13–18 years selected using stratified random sampling from five schools.

Data Collection Tools

- Demographic questionnaire
- Screen time assessment scale
- Generalized Anxiety Disorder Scale (GAD-7)
- Patient Health Questionnaire (PHQ-9)
- Rosenberg Self-Esteem Scale
- **Inclusion Criteria:** Adolescents aged 13–18 years with parental consent.
- **Exclusion Criteria:** Adolescents currently undergoing psychiatric treatment.
- **Statistical Analysis:** Data analyzed using SPSS v25. Pearson correlation and multiple regression analysis were performed. Significance level set at $p < 0.05$.

Results

Among the 600 adolescents included in the study, 312 (52%) were males and 288 (48%) were females. The mean age of participants was 15.6 ± 1.7 years. Most participants reported daily use of smartphones and internet-based applications. High screen time exceeding four hours per day was reported by 252 participants (42%), while 408 participants (68%) reported daily use of social networking platforms. Furthermore, 210 participants (35%) acknowledged using digital devices after bedtime.

Table 1.Demographic Characteristics of Participants

(N=600)

Variable	Frequency (n)	Percentage (%)
Male	312	52.0
Female	288	48.0
Age 13–15 years	274	45.7
Age 16–18 years	326	54.3
Urban Schools	360	60.0

ISSN: 2349-2880
DOI: https://doi.org/.10.24321/2349.2880.202605

Semi-Urban Schools	240	40.0

Table 2.Digital Media Usage Characteristics

Variable	Frequency (n)	Percentage (%)
Screen Time >4 h/day	252	42.0
Daily Social Media Use	408	68.0
Device Use After Bedtime	210	35.0
Educational Use >2 h/day	294	49.0

Table 3.Mental Health Outcomes

Outcome	Frequency (n)	Percentage (%)
Moderate-Severe Anxiety	168	28.0
Moderate-Severe Depression	132	22.0
Low Self-Esteem	186	31.0

Table 4.Correlation between Screen Time and Mental Health Outcomes

Variable	Correlation Coefficient (r)	p-value
Anxiety	0.41	<0.001
Depression	0.35	<0.001
Self-Esteem	-0.29	<0.001

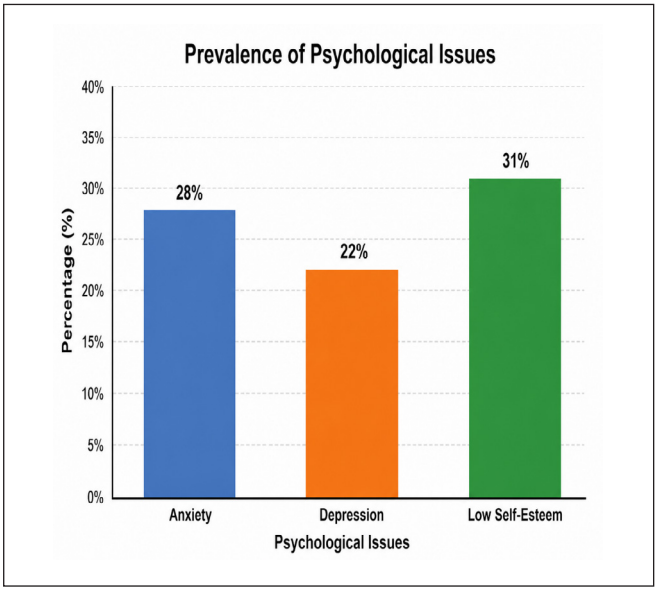

Figure 1.Prevalence of Mental Health Outcomes

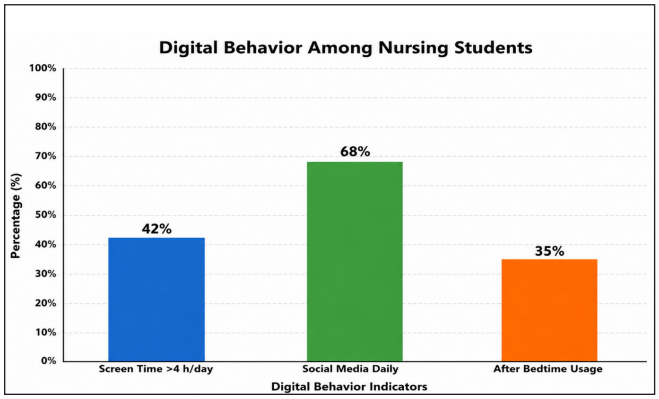

Figure 2. Digital Media Usage Patterns

The findings demonstrated statistically significant positive correlations between screen time and anxiety ($r = 0.41$, $p < 0.001$) as well as depression ($r = 0.35$, $p < 0.001$). Conversely, screen time exhibited a significant negative association with self-esteem ($r = -0.29$, $p < 0.001$). Multiple regression analysis indicated that screen time remained a significant predictor of anxiety and depressive symptoms after controlling for age and gender. Sleep quality was identified as a mediating factor, suggesting that adolescents engaging in excessive nighttime digital media use were more likely to experience psychological distress.

The observed findings support the Displacement Theory, which suggests that prolonged digital media engagement may replace health-promoting activities such as sleep, physical exercise, and interpersonal interactions. Reduced participation in these activities may increase vulnerability to emotional disturbances and psychological stress. The results also support Social Comparison Theory, as extensive social media exposure may contribute to negative self-perceptions and lower self-esteem through comparison with idealized online representations. Furthermore, the Cognitive Behavioral Model suggests that excessive digital engagement may reinforce maladaptive thought patterns and emotional dependency on online interactions, contributing to anxiety and depressive symptoms.

Discussion

The present study investigated the relationship between digital media use and mental health outcomes among Indian adolescents and demonstrated significant associations between excessive screen time, anxiety, depression, and reduced self-esteem. These findings contribute to the growing body of evidence suggesting that digital media consumption may have important implications for adolescent psychological well-being.

A notable finding was that 42% of participants reported screen time exceeding four hours per day. This prevalence reflects the increasing integration of digital technologies into adolescents' daily lives and is consistent with recent

ISSN: 2349-2880
DOI: https://doi.org/.10.24321/2349.2880.202605

studies conducted in both developed and developing countries. Increased accessibility of smartphones, affordable internet services, and widespread adoption of social networking platforms have significantly altered patterns of communication and leisure among young individuals.

The study found a significant positive association between screen time and anxiety symptoms. Similar findings have been reported by Keles et al., who identified a consistent relationship between social media use and increased anxiety among adolescents.[10] One possible explanation is that continuous exposure to online content, notifications, and social interactions may generate psychological pressure and emotional overload. Additionally, concerns related to social approval, online reputation, and cyberbullying may further contribute to anxiety symptoms.

Depressive symptoms were also significantly associated with increased digital media use. This finding aligns with previous studies conducted by Twenge and colleagues, who reported higher rates of depression among adolescents with excessive digital device usage.[4] Prolonged screen exposure may reduce opportunities for meaningful face-to-face social interactions and physical activity, both of which are protective factors for mental health. Furthermore, social comparison processes occurring on social media platforms may contribute to feelings of inadequacy and dissatisfaction.

The negative association between screen time and self-esteem observed in the present study supports the Social Comparison Theory. Adolescents frequently encounter idealized images and carefully curated content on social networking platforms, which may foster unrealistic expectations regarding appearance, lifestyle, and social success. Repeated exposure to such content can negatively influence self-perception and self-worth.

Sleep quality emerged as a significant mediating factor between digital media use and mental health outcomes. Consistent with findings reported by Woods and Scott[11], adolescents who used digital devices after bedtime exhibited greater levels of anxiety and depression. Exposure to blue light emitted from electronic screens may suppress melatonin production and disrupt normal circadian rhythms. Inadequate sleep has been extensively associated with emotional instability, impaired cognitive functioning, and increased risk of mental health disorders.

From a public health perspective, these findings highlight the need for comprehensive interventions targeting healthy digital media use among adolescents. Schools, parents, healthcare professionals, and policymakers must collaborate to promote balanced technology use while preserving the educational and social benefits of digital platforms.

Conclusion

The present study demonstrated a significant association between excessive digital media use and adverse mental health outcomes among Indian adolescents. High screen time was positively associated with anxiety and depressive symptoms and negatively associated with self-esteem. Sleep disturbance emerged as an important mediating factor linking digital media exposure to psychological distress. These findings emphasize the growing public health importance of digital well-being among adolescents in India.

As digital technologies continue to expand across educational, social, and recreational domains, strategies promoting responsible and balanced media use are essential. Educational institutions, families, healthcare providers, and policymakers should collaborate to develop evidence-based interventions that encourage healthy digital habits, improve mental health awareness, and support adolescent well-being. Future longitudinal and intervention-based studies are recommended to establish causal relationships and evaluate the effectiveness of preventive strategies.

Recommendations

The findings indicate a need for comprehensive digital literacy programs within schools that educate adolescents regarding healthy screen use, online safety, cyberbullying prevention, and responsible social media engagement. Such programs should be integrated into school health curricula and delivered regularly throughout adolescence.

Parents should be encouraged to actively monitor digital media use and establish appropriate screen time limits while maintaining open communication regarding online experiences. Family-based interventions may help adolescents develop healthier technology habits and improve emotional resilience.

Educational institutions should strengthen school-based mental health services by implementing routine psychological screening programs, counseling facilities, and awareness campaigns addressing the relationship between digital media use and mental well-being. Teachers should receive training to identify early signs of psychological distress among students.

Public health authorities should develop national guidelines addressing adolescent digital media use and promote campaigns emphasizing balanced technology engagement, physical activity, sleep hygiene, and social interaction. Collaborative efforts between government agencies, educational institutions, and technology companies may facilitate the creation of safer digital environments for adolescents.

ISSN: 2349-2880
DOI: https://doi.org/.10.24321/2349.2880.202605

References

1. World Health Organization. Adolescent mental health. Geneva: WHO; 2021.
2. Twenge JM. iGen: Why today's super-connected kids are growing up less rebellious. New York: Atria Books; 2017.
3. Keles B, McCrae N, Grealish A. A systematic review: the influence of social media on depression, anxiety and psychological distress in adolescents. Int J Adolesc Youth. 2020;25(1):79–93.
4. Ministry of Health and Family Welfare. National adolescent health programme strategy. New Delhi: Government of India; 2020.
5. Przybylski AK, Weinstein N. Digital screen time limits and young children's psychological well-being. Psychol Sci. 2017;28(2):204–15.
6. Woods HC, Scott H. #Sleepyteens: social media use in adolescence is associated with poor sleep quality, anxiety, depression. J Adolesc. 2016;51:41–9.
7. Sampasa-Kanyinga H, Lewis RF. Frequent use of social networking sites is associated with poor psychological functioning among children and adolescents. Cyberpsychol Behav Soc Netw. 2015;18(7):380–5.
8. Festinger L. A theory of social comparison processes. Hum Relat. 1954;7(2):117–40.
9. Davis RA. A cognitive-behavioral model of pathological Internet use. Comput Human Behav. 2001;17(2):187–95.
10. Keles B, McCrae N, Grealish A. Int J Adolesc Youth. 2020;25(1):79–93.
11. Woods HC, Scott H. J Adolesc. 2016;51:41–49.
12. Twenge JM, Martin GN, Spitzberg BH. Clin Psychol Sci. 2019;7(1):3–17.
13. Odgers CL, Jensen MR. Child Dev Perspect. 2020;14(1):43–49.
14. Rideout V, Robb MB. The Common Sense Census. San Francisco: Common Sense Media; 2021.
15. Boer M, Stevens GWJM, Finkenauer C, et al. J Youth Adolesc. 2021;50(1):83–100.
16. Viner RM, Davie M, Firth A. The health impacts of screen time. London: Royal College of Paediatrics and Child Health; 2019.
17. UNICEF. State of the World's Children 2021. New York: UNICEF; 2021.
18. Ministry of Health and Family Welfare. Rashtriya Kishor Swasthya Karyakram. New Delhi: Government of India; 2022.
19. Sampasa-Kanyinga H, Lewis RF. Cyberpsychol Behav Soc Netw. 2015;18(7):380–385.
20. Orben A, Przybylski AK. Nat Hum Behav. 2019;3(2):173–182.

ISSN: 2349-2880
DOI: https://doi.org/.10.24321/2349.2880.202605