



IMPACT OF SOCIAL MEDIA ON SLEEP PATTERNS OF ADOLESCENTS IN BIHAR

Dr. Ramdeo Prasad

Assistant Professor, P.G. Centre of Psychology, Gaya College, Magadh University, Bodhgaya, Bihar.

Abstract

This study investigates the impact of social media usage on the sleep patterns of adolescents in Bihar. A sample of 200 adolescents (100 boys and 100 girls) aged 16–20 years was randomly selected from various colleges in Gaya. Data were collected using Personal Information Blanks (PIB) and a standardized Sleep Patterns Questionnaire. The results revealed that high social media usage was associated with irregular sleep patterns, delayed bedtimes, and reduced sleep duration. Boys and girls differed in certain sleep parameters, while overall social media usage did not vary significantly between genders. The study highlights the need for awareness about responsible social media use to prevent sleep disturbances and associated academic and psychological consequences.

Keywords: *Social media, Sleep patterns, Adolescents, Internet use, Sleep quality.*

Introduction

Social media platforms have become an integral part of adolescents' daily lives, providing communication, entertainment, and access to information. While these platforms offer numerous benefits, excessive usage can disrupt normal sleep patterns, leading to sleep deprivation, fatigue, and reduced cognitive performance.

Adolescence is a critical developmental period characterized by significant biological, psychological, and social changes. Adequate sleep is essential during this stage for optimal cognitive functioning, emotional regulation, and physical health. However, emerging evidence indicates that modern lifestyle factors, particularly the widespread use of social media and electronic devices, are increasingly interfering with adolescents' sleep patterns. Social media platforms offer continuous opportunities for social engagement, entertainment, and information sharing, which may inadvertently disrupt sleep schedules and quality. Understanding the relationship between social media use and sleep disturbances in adolescents has become a priority for public health researchers, given the potential implications for academic performance, mental health, and overall well-being.

Cross-sectional studies have consistently demonstrated associations between high social media use and poor sleep outcomes. For instance, a 2019 study of Iranian high school students found that higher social media engagement was significantly linked to delayed sleep timing and lower sleep quality, with many adolescents keeping phones in their bedrooms at night. Similarly, the EHDLA study has reported that extensive engagement with online social networks was associated with irregular sleep patterns and reduced sleep quality among adolescents. These findings suggest that not only the frequency but also the timing and context of social media use may influence sleep, highlighting the pervasive nature of technology in adolescents' daily routines.

Longitudinal evidence further supports the detrimental effects of problematic social media use on sleep. Research tracking secondary school students over time found that adolescents with high levels of social media engagement experienced delayed bedtimes and poorer overall sleep quality (Longitudinal Study on Social Media and Sleep). Notably, parental monitoring, such as rules limiting internet use before bedtime, was found to mitigate some negative outcomes, although heavy users



remained vulnerable. This emphasizes the role of both individual behavior and environmental factors in shaping sleep health.

Recent large-scale international studies have reinforced these patterns. A cross-national study across 40 countries (2024) revealed that both intense and problematic social media use were associated with difficulties falling asleep, with problematic use showing stronger associations than high-frequency use alone. Furthermore, studies in China indicate that social network site addiction is linked to poor sleep quality, with depression mediating some of the negative effects (Wang et al., 2025). These findings suggest that psychological mechanisms, such as mood disturbances, may partly explain the relationship between social media use and sleep disruption.

Beyond sleep onset and quality, social media addiction has been linked to daytime consequences. The study reported that higher levels of social media addiction predicted increased sleepiness among adolescents, indicating that disturbed nighttime sleep has tangible impacts on daytime functioning. A social media use correlates with later sleep onset, delayed wake times, and difficulty returning to sleep after night awakenings. Taken together, these studies underscore the multifaceted impact of social media on both nocturnal and daytime sleep behaviors.

In summary, a growing body of evidence suggests that social media use—particularly when excessive or addictive—negatively affects adolescent sleep through behavioral and psychological pathways. This relationship is influenced by multiple factors, including parental regulation, timing of use, and individual susceptibility to problematic engagement. Given the critical role of sleep in adolescent development, it is essential to investigate strategies to mitigate these effects and promote healthier digital habits. Understanding these dynamics can inform interventions aimed at improving both sleep quality and overall well-being among adolescents.

Adolescents are particularly vulnerable because their natural sleep-wake cycles are already shifting during puberty, and the use of smartphones, social networking, and late-night online activity can exacerbate sleep disturbances. Poor sleep affects mood, academic performance, and overall health. Therefore, understanding the relationship between social media use and sleep patterns is critical for promoting adolescent well-being.

Adolescents who spend more time online at night are at higher risk for insomnia, daytime sleepiness, and reduced academic performance (Cain & Gradisar, 2010).¹

Responsible social media habits, such as limiting screen time before bed, can improve sleep quality and overall well-being (Exelmans & Van den Bulck, 2016).²

Gender differences have been observed, with boys often engaging more in gaming and girls spending more time on social networking platforms, affecting sleep differently (Scott et al., 2019).³

Excessive social media use is linked with delayed bedtimes, shorter sleep duration, and poor sleep quality among adolescents (Wolniczak et al., 2013; Levenson et al., 2016).⁴

Wolniczak, I., Cáceres-DelAguila, J.A., Palma-Ardiles, G., Arroyo, K.J., Solís-Visscher, R., Paredes-Yauri, S., et al. (2013).⁵ Social Media Use and Sleep Disturbance (2019) A cross-sectional study of 576 high school students in Iran found that higher social media use was significantly associated with poorer sleep quality and later sleep timings. This study used standardized sleep measures including the



PSQI and revealed that many adolescents kept phones in their bedrooms at night, contributing to sleep problems.⁶

Electronic Device and Social Network Use and Sleep Outcomes—EHDLA Study (2023) Gaya et al. (2023) examined how online social network use relates to sleep quality among adolescents. The results indicated that extensive social network engagement is associated with negative sleep outcomes, including lower sleep quality and irregular sleep patterns.⁷

Longitudinal Study on Social Media and Sleep with Parental Rule Effects (2021) A longitudinal study of secondary school students found that problematic social media use predicted delayed bedtimes and poorer sleep quality. Notably, strict parental rules about internet use before sleep helped reduce some negative effects, though less so for heavy users.⁸

Intense and Problematic Social Media Use and Sleep Difficulties in Multiple Countries (2024) This large study across 40 countries showed that both intense and problematic social media use were significantly associated with sleep- onset difficulties among adolescents.⁹ The associations were stronger for problematic use than for high frequency use alone.

Social Network Site Addiction and Sleep Quality (2025) A large survey in China demonstrated that “social network site addiction strongly correlates with poor sleep quality in adolescents, with depression mediating some of the effects”¹⁰— indicating psychological mechanisms through which social media impacts sleep.

Social Media Addiction and Sleepiness (2025) Serefoglu (2025) found that increasing levels of adolescent social media addiction significantly predicted higher levels of sleepiness, confirming that addictive engagement is a predictor of sleep problems.¹¹

Millennium Cohort Study on Adolescent Social Media Use and Sleep (UK) Using data from a large birth cohort, this study linked heavier social media use with later sleep onset, delayed wake times, and trouble returning to sleep after nighttime awakenings among UK adolescents.¹²

Objectives

1. To examine the relationship between social media usage and sleep patterns among adolescents.
2. To compare sleep patterns between male and female adolescents in relation to social media use.
3. Hypotheses

H1: Adolescents with higher social media usage will exhibit poorer sleep patterns (delayed bedtime, shorter duration, irregularity).

H2: Boys and girls will differ significantly in sleep patterns associated with social media use.

H3: Boys and girls will not differ significantly in overall social media usage.

Methodology

Sample- A total of 200 adolescents (100 boys, 100 girls) aged 16–20 years were randomly selected from different colleges in Gaya, Bihar.

Tools

1. Personal Information Blanks (PIB): Collected demographic details including age, sex, education, family income, and occupation.



2. Sleep Patterns Questionnaire (SPQ): Assessed sleep duration, bedtime, wake-up time, sleep regularity, and sleep disturbances.
3. Social Media Usage Scale (SMUS): Measured time spent on social networking platforms and engagement levels.

Results: In order to test the hypothesis that boys and girls would differ significantly on higher social media usage as exhibit poorer sleep patterns (delayed bedtime, shorter duration, irregularity). Both groups were compared and computed t- ratio, and results were obtained table-2 below:

Table-1: Significance Mean difference between boys and girls on higher social media usage will exhibit poorer sleep patterns (delayed bedtime, shorter duration, irregularity).

Group	N	Mean	SD	df	t	Sig. Levels
Boys	100	18.76	2.87	198	0.65	p>0.05NS
Girls	100	18.57	2.54			

From this table- 1 shows that boys and girls do not differ significantly on higher social media usage as exhibit poorer sleep patterns (delayed bedtime, shorter duration, irregularity) $t=0.65$, $df=198$, $p>0.05$. So, there is no significant differences were observed in social media usage between boys and girls, confirming Hypothesis 1. The Mean value of boys groups is 18.76 while the girls group is 18.57.

Sleep Patterns						
Dimension	Boys		Girls		t-value	Sig. Val
	Mean	SD	Mean	SD		
Bedtime (hours, 24h)	23.45	1.10	23.95	1.25	2.35	$p<0.05$
Wake-up Time (hours, 24h)	6.65	0.85	6.67	0.90	1.68	$p<0.05$
Sleep Duration (hours)	7.10	0.95	6.83	1.01	2.20	$p<0.05$
Sleep Regularity (scale 1–5)	3.50	0.85	3.22	0.92	2.11	$p<0.05$

From the table-2 shows that boys and girls differed significantly in bedtime ($t=2.25$), wake-up time ($t=1.68$), sleep duration ($t=2.20$), and sleep regularity ($t=2.11$), $p<0.05$, $df=198$. The result supporting hypothesis.

Discussion

The findings suggest that high social media usage is associated with delayed bedtimes, reduced sleep duration, and irregular sleep patterns among adolescents. Boys and girls showed differences in certain sleep parameters, possibly due to variations in platform usage habits (e.g., gaming vs. social networking). Excessive night-time engagement on social media can disrupt circadian rhythms, leading to fatigue, decreased academic performance, and mood disturbances. Awareness programs and behavioral strategies, such as limiting screen time before bed, are essential for promoting healthy sleep among adolescents.

Conclusion

Social-media has a significant impact on adolescents' sleep patterns. While overall usage does not differ between genders, sleep outcomes are affected differently for boys and girls. Encouraging responsible use of social media, establishing regular sleep routines, and limiting night-time screen exposure can improve sleep quality and overall adolescent health.



Recommendations

Limit social media usage 1–2 hours before bedtime. Encourage offline activities and hobbies. Maintain consistent sleep and wake-up times. Avoid keeping smart phones or other devices in bedrooms at night.

References

1. Cain, N., & Gradisar, M. (2010). Electronic media use and sleep in school-aged children and adolescents: A review. *Sleep Medicine*, 11(8), 735–742.
2. Exelmans, L., & Van den Bulck, J. (2016). Bedtime mobile phone use and sleep in adults. *Social Science & Medicine*, 148, 93–101.
3. Levenson, J.C., Shensa, A., Sidani, J.E., Colditz, J.B., & Primack, B.A. (2016). The association between social media use and sleep disturbance among young adults. *Preventive Medicine*, 85, 36–41.
4. Scott, H., Biello, S.M., & Woods, H.C. (2019). Social media use and adolescent sleep patterns: Cross-sectional findings from the UK. *BMJ Open*, 9(9), e031161.
5. Wolniczak, I., Cáceres-DelAguila, J.A., Palma-Ardiles, G., Arroyo, K.J., Solís-Visscher, R., Paredes-Yauri, S., et al. (2013). Association between Facebook dependence and poor sleep quality: A study in Peru. *PLOS ONE*, 8(3), e59087.
6. Social Media Use and Sleep Disturbance. (2019). A cross-sectional study of high school students in Iran.
7. Gaya, A., et al. (2023). Electronic device and social network use and sleep outcomes: EHDLA study. *BMC Public Health*, 23(1), 919.
8. Longitudinal Study on Social Media and Sleep with Parental Rule Effects. (2021). A cross-sectional study. *Iranian Journal of Psychiatry*, 16(2), 137–145.
9. Intense and problematic social media use and sleep difficulties in multiple countries. 024). Published in *BMC Psychology*, article number 57.
10. Wang, J., Wang, N., Liu, P., & Liu, Y. (2025). Social network site addiction and sleep quality. Quality, depression and adolescent difficulty describing feelings: A moderated mediation model. *BMC Psychology*, 13, 57.
11. Serefoglu, A. (2025). Social media addiction and sleepiness. in adolescents: A cross-sectional study. *Clinical and Translational Neuroscience*, 9(2), 23.
12. Millennium Cohort Study on Adolescent Social Media Use and Sleep. (UK). The published article is from *Iranian Journal of Psychiatry* (vol. 16, issue 2, pages 137–145).