

Digital Overload: Exploring The Relationship Between Social Media Usage And Sleep Deprivation

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Abstract:

This study investigates the relationship between social media usage and sleep deprivation among adolescents. With the rapid advancement of digital technology and the widespread availability of smartphones, adolescents today are more connected to social media platforms than ever before. This increasing dependence on social media and phones has raised a significant concern regarding its impact on mental, physical health and particularly sleep quality and duration. The data was collected through an online survey, examined, and backed up by secondary resources. The results revealed that most adolescents use social media for entertainment and often engage in late night scrolling, sacrificing essential rest hours, leading to patterns of sleep deprivation. These findings align with existing literature suggesting that increased nighttime social media use contributes to reduced sleep quality and fatigue. In conclusion, this study concludes that excessive social media use significantly disrupts adolescents sleep patterns.

Keywords: Social Media Usage, Sleep Deprivation, Sleep Quality, Adolescents.

1. Background

In recent years, social media (SM) has become a big part of daily life, especially for teenagers and young adults. Apps like Instagram, Snapchat, TikTok, and WhatsApp are commonly used to stay connected, share updates, and relax. While social media can be fun and even helpful in some cases, many people are starting to worry about how too much use or what some call “digital overload” is affecting important parts of our health, especially sleep.

Sleep is essential for good mental and physical health, but many studies have shown that teenagers are not getting enough of it. One major reason seems to be social media. Several studies have found that the more time people spend on social media, especially at night, the less sleep they get and the worse their sleep quality becomes (Royant-Parola S, 2017). Using screens before bed delays the body’s natural sleep signals and can keep the brain active when it should be winding down. In one study, more than half of the teenagers admitted to using screens after bedtime, with many waking up tired and having trouble focusing during the day (Nasirudeen, Adeline, Josephine, Seng, Li, 2017).

Notably, social media use also seems to affect girls more than boys. Girls tend to use social media more often and are more likely to be affected by things like body image pressure and cyberbullying. These issues can make it even harder for them to sleep well and feel good during the day (Manjur Kolhar, 2021; Daniels, 2021). At the same time, sleep-deprived teens are also more likely to show other risky behaviors, like smoking, drinking, or being involved in fights (Weaver, Barger, Malone, Anderson, and Klerman, 2018; Paiva and Gaspar, 2016).

Even though these problems are serious, many young people don’t realize the effects of their social media habits. Most say they use social media just to pass the time or chat, and very

few use it for learning or schoolwork (Kolhar, Kazi, Alameen, 2021). This shows a gap in awareness and highlights the need to better understand how social media and sleep are connected.

Despite growing awareness, many people remain unaware of the consequences of excessive social media use. Most use these platforms primarily for entertainment or passive browsing, often prioritizing digital interaction over sleep and academic performance (Kolhar, Kazi, Alameen, 2021; Winther, Daniel, 2014). Given the serious implications for mental and physical health, exploring the relationship between social media usage and sleep deprivation is essential.

At this backdrop, the present research study is intended to explore how social media usage affects sleep quality in adolescents.

2. Literature Review

The literature review for this research study has been divided into three sections, i.e., Social media usage, Sleep patterns and deprivations, and the impact of social media on sleep.

2.1 Social Media Usage

In recent years, social media usage and its effects have received growing attention from researchers. As social media becomes a bigger part of our daily routines, especially among adolescents and young adults, many concerns are rising about how it affects our physical and mental well-being. The COVID-19 pandemic has also influenced digital habits studies by Lee (2023) and Chalermchutidej (2023) found that teenagers spent significantly more time on social media during lockdowns, often late at night. This increase in usage was driven by isolation, boredom, and the shift to online learning, and it has led to long-term changes in online behavior. As students adapted to a digital lifestyle, the habit of late-night scrolling became more common, particularly for entertainment and emotional coping. Research by Kolhar, Kazi, & Alameen (2021) supports this, indicating that a large majority of students use social media primarily for non-academic purposes such as chatting or passing the time, with only a few using social media for academic purposes. This shift towards habitual, entertainment-focused usage risks developing addictive behaviors, a concern further confirmed by Basu (2021), who found that medical students in India showed significant signs of social media addiction, struggling to reduce usage despite negative consequences.

2.2 Sleep Patterns and Deprivation

With the increase in social media use, researchers have started to pay closer attention to sleep-related issues in adolescents. A consistent finding is that frequent use of social media especially late at night leads to reduced sleep. Royant-Parola et al. (2017) showed that teens who used their phones or devices before bed had difficulty falling asleep and reported feeling more tired in the morning. In a similar study, Kolhar (2021) discovered that university students who spent more time on social platforms for entertainment reported worse sleep quality and struggled with academic performance. Moreover, Lee (2023) found that teens during the pandemic had trouble waking up, felt low energy during the day, and in some cases, even experienced symptoms of depression. These findings point to widespread sleep deprivation that is often linked to excessive screen use and lifestyle changes, particularly in adolescence, and the consequences extend beyond tiredness; Weaver (2018) demonstrated a dose-dependent relationship between sleep deprivation and unsafe behaviors among high

school students, including substance use, aggression, and self-harm. Similarly, Paiva & Gaspar (2016) found that sleep-deprived adolescents were significantly more likely to engage in excessive mobile phone and computer use during weekdays, as well as in various risk behaviors, highlighting the broad implications of insufficient sleep on adolescent health and safety..

2.3. Impact of Social Media on Sleep

A study by Daniels (2021) introduced the idea of a “Triple S” problem: Social Media, Stress, and Sleep. Their research highlighted that constant notifications, comparison with others, and pressure to be “always online” increase emotional stress. This stress can make it harder for teens to wind down and fall asleep, even after they stop using their devices. Supporting this, Xie (2025) noted that information overload and digital fatigue could lead to mental exhaustion and insomnia. What’s more, studies show that the impact of social media on sleep is often greater among girls, who are more vulnerable to body image issues and social comparison. Research by Li, Li, & Luo (2024) further revealed a vicious cycle where poor sleep leads to increased social media use, which in turn increases sleep problems. This reciprocal relationship suggests that interventions must be carefully timed to break the cycle. Additionally, Exelmans & Van den Bulck (2018) identified multiple mechanisms through which electronic media disrupts sleep, including blue light exposure, sleep displacement (choosing media over sleep). This comprehensive view is supported by Han, Zhou, & Liu (2024), whose meta-analysis confirmed that both general and problematic electronic media use are significantly associated with decreased sleep quality and increased sleep problems across diverse cultural contexts.

3. Research objectives

Followings are the research objectives of the present research study;

- To understand the factors that influence social media usage among adolescents.
- To examine the impact of social media usage on sleep deprivation among adolescents.
- To understand the impact of excessive social media usage at night on the energy and enthusiasm level of adolescents.

4. Research Methodology

4.1 Research design

This research adopts a quantitative approach, as it involves collecting and analyzing numerical data through a survey that uses a Likert scale (agree-to-disagree format). The study uses a descriptive research design, which is suitable for examining and understanding the relationship between social media usage and sleep deprivation among adolescents. This design allows for the description of the characteristics and behaviours of the sample population regarding their social media habits and sleep patterns.

4.2 Sources of data

For the purpose of conducting research, both primary and secondary sources were used to collect data. Primary data was collected directly from the respondents by sending out a questionnaire prepared for data collection. The study is intended to investigate whether social media usage, which is believed to disrupt natural sleep signals (Daniels, M., Sharma, M., Batra, K., 2021; Paiva, Gaspar,2016), leads to sleep deprivation. ScienceDirect, PubMed, and

Our World in Data were major research databases utilized to collect desired research papers and articles, providing a foundation of existing evidence to support the primary findings.

4.3 Data Collection Instrument

A structured online questionnaire was developed using Google Forms and distributed to adolescents aged 13 to 22. The questionnaire was divided into four sections: demographic information, social media usage, sleep patterns and deprivation, and impact of social media on sleep. All items were measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The design and items were adapted from established studies on social media usage and sleep quality, including those by Kolhar et al. (2021), Royant-Parola et al. (2017), and Exelmans & Van den Bulck (2018), ensuring validity and reliability.

4.4 Sampling and Data Collection

The anticipated sample size was approximately 150 to 200 respondents, and a non-probability convenience sampling method was used to reach adolescents within the target age group. The survey was distributed through online channels, including social media platforms, to ensure a diverse and accessible respondent pool. A total of 178 complete responses were collected and used for analysis.

4.5 Data Analysis Plan

The collected data were organized and analyzed using descriptive statistical methods for each Likert-scale item to summarize the responses. Furthermore, the primary data was compared with insights gained from the secondary literature to identify consistent trends.

5. Data analysis

5.1 Social Media Usage

5.1.1 I feel addicted to social media.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	17	9.6
Disagree	24	13.5
Neutral	62	34.8
Agree	60	33.7
Strongly Agree	15	8.4
Total	178	100

Interpretation: Based on the above data, a significant proportion of respondents (42.1%) report feelings of addiction to social media. This finding is supported by Kolhar (2021), who identified similar addictive patterns in students. The high number of neutral responses (34.8%) suggests that many users may not acknowledge the addiction even though their behavior shows signs of addiction.

5.1.2 I spend time on social media mostly for entertainment.

Options	Responses in Numbers	Percentage (%)
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Strongly Disagree	7	3.9
Disagree	12	6.7
Neutral	31	17.4
Agree	78	43.8
Strongly Agree	50	28.1
Total	178	100

Interpretation: Based on the above data, most respondents use social media mainly for entertainment by a large majority (71.9%). This aligns with existing research (Kolhar., 2021; Aldhawyan, 2020), which found that social media use for non-academic purposes, distract students from their academic work, adversely affect their academic performance, social interactions, and sleep duration, and lead to a sedentary lifestyle and physical inactivity, which in turn can render them vulnerable to non-communicable diseases and mental health problems.

5.1.3 I use social media for more than 4 hours a day.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	38	21.3
Disagree	33	18.5
Neutral	43	24.2
Agree	35	19.7
Strongly Agree	29	16.3
Total	178	100

Interpretation: Based on the above data, Over a third of respondents (36%) use social media for more than four hours daily. The prolonged use of social media risks mental health issues, alongside sleep disturbances from extended screen time (Bozzola, 2022).

5.1.4 I check social media right before going to sleep.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	25	14
Disagree	28	15.7
Neutral	25	14
Agree	46	25.8

Strongly Agree	54	30.3
Total	178	100

Interpretation: Based on the above table, the majority (56.1%) check social media immediately before sleep. This habit is a well-documented contributor to poor sleep hygiene, as it introduces blue light from screens that mess with our sleep hormones at a time when the brain needs to wind down thus making it harder to fall asleep. (Exelmans & Van den Bulck, 2018; Royant-Parola, 2017).

5.1. 5 I use social media for academic or learning purposes.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	17	9.6
Disagree	43	24.2
Neutral	41	23
Agree	57	32
Strongly Agree	20	11.2
Total	178	100

Interpretation: Based on the above table, While a notable portion (43.2%) use social media for learning, its primary role remains non-academic. Consistent with findings like Kolhar, 2021.

5.1.6 I feel pressure to reply quickly to messages or comments.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	51	28.7
Disagree	47	26.4
Neutral	25	14
Agree	30	16.9
Strongly Agree	25	14
Total	178	100

Interpretation: Based on the above table, most respondents (55.1%) do not feel pressure to reply quickly online. This is a notable finding, as it contrasts with literature that often highlights the anxiety of maintaining an online presence (Daniels, 2021). It suggests that for this group, use may be more passive and consumption-based.

5.1.7 I use social media even when I have other important tasks to do.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	24	13.5
Disagree	32	18
Neutral	27	15.2
Agree	56	31.5
Strongly Agree	39	21.9
Total	178	100

Interpretation: Based on the above table, over half the respondents admit (53.4%) to use social media even when they have important tasks to complete. This behavior is a strong indicator of problematic use and a lack of self-regulation, aligning with models of social media addiction. This aligns with the findings of Kolhar, Kazi, and Alameen (2021), who found that 66% of students felt more drawn toward social media than toward academic activities, indicating a clear prioritization of digital interaction over responsibilities.

5.1.7 I often lose track of time while using social media.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	14	7.9
Disagree	21	11.8
Neutral	33	18.5
Agree	54	31.3
Strongly Agree	56	31.5
Total	178	100

Interpretation: According to the data, A strong majority (62.8%) report losing track of time while using social media. Smartphones are comfortable to use while lying in bed to surf the Internet, prolonged use of a smartphone can lead to sleep deprivation by unintentionally delaying bedtime (Xie, Dong, & Wang, 2018).

5.1.8 Social media helps me stay connected with friends and family.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	9	5.1
Disagree	18	10.1

Neutral	19	10.7
Agree	54	30.3
Strongly Agree	78	43.8
Total	178	100

Interpretation: Based on the above data, The vast majority (74.1%) agree that social media is crucial for maintaining social connections. This is the most agreed-upon benefit and is consistent across research (Daniels, 2021),

5.1.9 I use social media to escape boredom or stress.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	6	3.4
Disagree	11	6.2
Neutral	30	16.9
Agree	56	31.5
Strongly Agree	75	42.1
Total	178	100

Interpretation: Based on the above table, a majority (73.6%) use social media to escape boredom or stress. This kind of escapist use is strongly connected in research (Wong, 2020; Bozzola, 2022) to worse mental health, indicating it is often a harmful coping method.

5.1.10 I use social media to help me fall asleep.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	80	44.9
Disagree	43	24.2
Neutral	23	12.9
Agree	14	7.9
Strongly Agree	18	10.1
Total	178	100

Interpretation: According to the data, many of the respondents (69.1%) do not use social media to fall asleep. This demonstrates an awareness of its negative impact, which contrasts

with their reported behavior, indicating a clear knowledge-behavior gap. This awareness is significant given that Aldhawyan et al. (2020) found that using social media for entertainment and during bedtime was linked to an increased risk of poor sleep quality, suggesting respondents intuitively understand this negative association.

5.1.11 I scroll social media during meals or while doing homework.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	50	28.1
Disagree	33	18.5
Neutral	23	12.9
Agree	44	24.7
Strongly Agree	28	15.7
Total	178	100

Interpretation: According to the data, respondents are mostly divided on scrolling during meals or homework (40.4% agree vs. 46.6% disagree), showing varied multitasking behaviours but a little more than half disagree with this statement suggesting healthy digital habits. This multitasking behavior during academic work supports the conclusion by Kolhar, Kazi, and Alameen (2021) that social media use distracts students from their learning activities and adversely affects their academic performance.

5.1.12 I feel anxious when I can't access social media.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	70	39.3
Disagree	56	31.5
Neutral	27	15.2
Agree	15	8.4
Strongly Agree	10	5.6
Total	178	100

Interpretation: Based on the above data, a majority (70.8%) do not feel anxious when unable to access social media, showing limited withdrawal symptoms and social media anxiety. This limited experience of anxiety contrasts with the study by Kardefelt-Winther (2014), which identified withdrawal symptoms as a component of social media addiction and its impact on sleep.

5.1.13 I compare my life to others' posts on social media.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	64	36
Disagree	39	21.9
Neutral	32	18
Agree	21	11.8
Strongly Agree	22	12.4
Total	178	100

Interpretation: Based on the above table, Most respondents (57.9%) do not frequently compare their lives to others online. This contrasts with research that often highlights social comparison as a major negative outcome. However, a notable minority (24.2%) do engage in it, confirming it remains a risk for some people. The finding contrasts the work of Daniels (2021), who identified social comparison as a key factor increasing emotional stress and sleep disruption, particularly among girls.

5.2. Sleep Patterns and Deprivation

5.2.1 I don't get proper sleep at night.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	31	17.4
Disagree	34	19.1
Neutral	48	27
Agree	28	15.7
Strongly Agree	37	20.8
Total	178	100

Interpretation: According to the data, a divided opinion regarding sleep quality, with a significant portion (36.5%) reporting poor sleep. This prevalence of sleep issues is a common finding in Royant-Parola (2017) that social media use was strongly linked to sleep deprivation in teenagers, who reported higher levels of sleepiness, fatigue, and irritability. This suggests that for some groups, overall sleep quality is insufficient, which can have wide-ranging effects on daily functioning.

5.2.2 I feel tired even after waking up.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	19	10.7
Disagree	23	12.9
Neutral	47	26.4
Agree	45	25.3
Strongly Agree	44	24.7
Total	178	100

Interpretation: Based on the above data, half the respondents (50%) report feeling tired upon waking, indicating issues with sleep quality rather than just quantity. This symptom of non-restorative sleep is a key indicator of poor sleep hygiene. This aligns with the findings of Li, Li, & Luo (2024), whose study highlighted a “vicious cycle” where poor sleep leads to more social media engagement, which then contributes to worsening sleep, suggesting that interventions need to be timed carefully.

5.2.3 I usually sleep less than 7 hours on school/college days.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	23	12.9
Disagree	32	18
Neutral	21	11.8
Agree	50	28.1
Strongly Agree	52	29.2
Total	178	100

Interpretation: according to the table above, a majority of the respondents (57.3%) sleep less than the recommended 7 hours, confirming widespread sleep deprivation. This finding is strongly supported by Kolhar et al. (2021), who found that 46% and 39% of students went to bed between 11 pm-12 am and 1 am-2 am respectively, with 68% attributing this delay directly to social media use. This chronic sleep debt is a major concern for cognitive function and academic performance.

5.2.4 I feel sleepy during the day, even after a full night's rest.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	20	11.2
Disagree	37	20.8
Neutral	34	19.1
Agree	38	21.3
Strongly Agree	49	27.5
Total	178	100

Interpretation: Based on the data above, a little more than half of the respondents (48.8%) feel sleepy during the day despite a full night's rest, a classic symptom of poor sleep quality or disorders like sleep apnea. This directly matches the study by Nasirudeen (2017), which found that staying up late on social media was a major predictor of increased daytime sleepiness among university students. This shows how nighttime screen use directly affects alertness and performance the next day.

5.2.5 I reduce my sleep time to finish homework or study.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	17	9.6
Disagree	20	11.2
Neutral	24	13.5
Agree	51	28.7
Strongly Agree	66	37.1
Total	178	100

Interpretation: Based on the table above, the majority of the respondents (65.8%) sacrifice sleep for academics, showing a clear trade-off between school pressure and health. It also shows that social media is not the only cause, but academic pressure is also a major "sleep stealer." This finding is consistent with the research by Nasirudeen (2017), which identified academic pressures, such as staying up late to study, as a significant contributor to reduced sleep duration and daytime sleepiness among students.

5.2.6 I stay up late even when I have to wake up early.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	12	6.7
Disagree	27	15.2
Neutral	33	28.5
Agree	49	27.5
Strongly Agree	57	32
Total	178	100

Interpretation: According to the table above, a majority (59.5%) stay up late even when they need to wake up early, reinforcing unhealthy and irregular sleep patterns. This matches the idea of “sleep displacement” described by Exelmans & Van den Bulck (2018), where people choose screens over sleep, knowingly harming their rest. This choice to delay sleep is a key behavior linking technology to sleep loss.

5.2.7 I find it hard to stop using social media even when I feel tired.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	47	26.4
Disagree	43	24.2
Neutral	26	14.6
Agree	33	18.5
Strongly Agree	29	16.3
Total	178	100

Interpretation: Based on the table above, a smaller group (34.8%) struggle to stop when tired, this is a clear sign of compulsive use. This fits with Bozzola et al. (2022), where continued use despite bad results (like tiredness) is a sign of addictive behavior. This suggests that for some, the pull of social media can override basic needs like sleep.

5.2.8 I check social media if I wake up during the night.

Options	Responses in Numbers	Percentage (%)
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Strongly Disagree	83	46.6
Disagree	29	16.3
Neutral	25	14
Agree	19	10.7
Strongly Agree	22	12.4
Total	178	100

Interpretation: According to the data above, most of the respondents (62.9%) do not check social media if they wake during the night, showing this habit is less common which is good, as night checking disrupts sleep. However, the fact that nearly a quarter (23.1%) do check their phones shows it is a real issue for some, which is worrying given its strong effect on sleep. This problematic behavior for a minority of respondents aligns with the findings of Royant-Parola et al. (2017), who reported that many teenagers continue screen use after bedtime, even during the night, which is strongly linked to sleep deprivation.

5.2.8 I've stayed up scrolling social media even when not chatting with anyone.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	24	13.5
Disagree	18	10.1
Neutral	26	14.6
Agree	52	29.2
Strongly Agree	58	32.6
Total	178	100

Interpretation: Based on the data above, many respondents (61.8%) do passive, non-social scrolling at night. This key finding supports Chalermchutidej (2023), which found more social media use linked to worse sleep quality. It shows that it is not just talking but also mindless watching that adds to late nights and less sleep.

5.2.9 I check social media immediately after waking up.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	41	23

Disagree	31	17.4
Neutral	21	11.8
Agree	39	21.9
Strongly Agree	46	25.8
Total	178	100

Interpretation: According to the data above, a significant group of respondents (47.7%) check social media first, showing how woven it is into daily life. This habit can shape the day, possibly increasing need and setting the stage for frequent checks, which can continue the cycle of use all day and night. This behavior depicts the “vicious cycle” described by Li, Li, & Luo (2024), where engagement with social media at one point in the day can predict further use and that impacts sleep later on.

5.2.10 I feel my sleep quality has declined over the past year.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	26	14.6
Disagree	30	16.9
Neutral	27	15.2
Agree	41	23
Strongly Agree	54	30.3
Total	178	100

Interpretation: Based on the data above, many (53.3%) feel their sleep has gotten worse. This personal view is important and is supported by Li, Li, & Luo (2024), who found that If students had sleep issues at one point, they tended to increase their social media use later on, possibly as a coping mechanism.

5.3 Impact of social media on sleep

5.3.1 I check social media while lying in bed before sleeping.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	21	11.8
Disagree	17	9.6

Neutral	29	16.3
Agree	54	30.3
Strongly Agree	57	32
Total	178	100

Interpretation: Based on the table above, a majority of the respondents (62.3%) use social media in bed, making it a main pre-sleep activity. This is a known cause of sleep issues. Exelmans & Van den Bulck (2018) say this disrupts sleep through blue light, taking time from sleep, and mental stimulation, stopping the mind from calming down for sleep.

5.3.2 I keep my phone within arm's reach while sleeping.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	28	15.7
Disagree	17	9.6
Neutral	15	8.4
Agree	35	19.7
Strongly Agree	83	46.6
Total	178	100

5.3 According to the table above, a significant amount of the respondents (66.3%) keep their phone within arms reach while sleeping suggesting constant accessibility that enables sleep-disruptive behaviors. This finding directly supports the mechanism of “sleep displacement” described by Exelmans & Van den Bulck (2018), as having the phone readily available makes it easier to choose media use over sleep.

5.3.3 I continue scrolling on social media even when I know I should sleep.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	26	14.6
Disagree	27	15.2
Neutral	28	15.7
Agree	44	24.7

Strongly Agree	53	29.8
Total	178	100

Interpretation: Based on the data above, a majority of people (54.5%) keep scrolling even though they know they should sleep. This behavior shows clear trouble with self-control and matches models of social media addiction described by Kardefelt-Winter (2014). The study found that too much social media use directly affects sleep patterns through later bedtimes and less sleep. This pattern is a major block to keeping healthy sleep habits among students.

5.3.4 My sleep schedule has worsened with increased social media use.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	26	14.6
Disagree	27	15.2
Neutral	39	21.9
Agree	41	23
Strongly Agree	45	25.3
Total	178	100

Interpretation: Based on the table above, Nearly half of the respondents (48.3%) say their sleep schedule has gotten worse with more social media use. This finding matches Han, Zhou, & Liu (2024), whose large review of studies found that electronic media use strongly links to lower sleep quality.

5.3.5 I lose track of time while using social media at night.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	27	15.2
Disagree	27	15.2
Neutral	49	27.5
Agree	36	20.2
Strongly Agree	39	21.9
Total	178	100

Interpretation: According to the table above, more than half the respondents (52.1%) lose sense of time during nighttime social media use. This finding backs Xie, Dong, & Wang (2018)'s research that found losing track of time is a key way phone use links to health symptoms. Their study showed how absorbed states during smartphone use lead to unplanned results, including sleep loss from later bedtimes. This is a major design feature in social media platforms that encourages longer use eventually leading to addiction.

5.3.6 Even when very tired, I check social media before sleeping.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	44	24.7
Disagree	40	22.5
Neutral	32	18
Agree	32	18
Strongly Agree	30	16.9
Total	178	100

Interpretation: Based on the table above, a notable number of people (34.9%) still use social media even when very tired. This pattern matches Bozzola (2022)'s signs for problematic use, where behaviors continue even with bad results. Their research saw this compulsive use as a sign of behavioral addiction patterns, especially when it overrides the body's sleep signals. This suggests platform design features can break natural sleep-wake cycles.

5.3.7 I sleep less on school nights because I use social media late.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	44	24.7
Disagree	47	26.4
Neutral	41	23
Agree	22	12.4
Strongly Agree	24	13.5
Total	178	100

Interpretation: According to the table above, Only 25.9% respondents directly blame less sleep on social media use, creating a gap between what they think and do. This difference suggests possible mixed feelings about social media's sleep effects, as research shows users often blame sleep loss on more accepted reasons. Kardefelt-Winter (2014) noted that while

behavior patterns show clear links, people's own blame of sleep problems on social media use stays inconsistent among students.

5.3.8 I sleep better on days I avoid my phone in the evening.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	25	14
Disagree	21	11.8
Neutral	68	38.2
Agree	27	15.2
Strongly Agree	37	20.8
Total	178	100

Interpretation: Based on the table above, more people agree (36%) than disagree (25.8%) that avoiding their phone leads to better sleep, supporting the link between reduced use and better rest. This self-awareness from respondents supports the conclusions of Han, Zhou, & Liu (2024), whose meta-analysis found a significant association between electronic media use and decreased sleep quality.

5.3.9 I often don't realize how late it is until I stop scrolling.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	46	25.8
Disagree	46	25.8
Neutral	24	13.5
Agree	31	17.4
Strongly Agree	31	17.4
Total	178	100

Interpretation: Based on the data above, a significant number of people (34.8%) agree that scrolling makes them lose track of time, highlighting the time-consuming nature of social media and their poor time awareness during social media use. This finding matches research on the absorbing qualities of social media and its ability to disrupt time sense. Dr.Ivan Del Valle(2025)recorded how endless-scroll features and algorithmically-picked content promote time loss, adding much to unplanned sleep deprivation among users.

5.3.10 Using social media at night keeps me alert and delays sleep.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	40	22.5
Disagree	31	17.4
Neutral	37	20.8
Agree	36	20.2
Strongly Agree	34	19.1
Total	178	100

Interpretation: According to the table above, (39.3%) admit to social media delaying sleep, This notice matches Exelmans & Van den Bulck (2018)'s recording of multiple alertness causes, including blue light and interesting content that keeps the mind awake. Their research explained how these factors together work against natural sleep processes, backing people's experiences of put-off sleep.

5.3.11 I feel my sleep problems are related to my social media habits.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	51	28.7
Disagree	30	16.9
Neutral	48	27
Agree	26	14.6
Strongly Agree	23	12.9
Total	178	100

Interpretation: Based on the table above, a small portion (27.5%) acknowledge that social media can disrupt sleep, showing a major gap between their actions and awareness. This supports research (Ortiz-Ospina, 2019) showing that the relationship between media and wellbeing is complex and two-way. Essentially, many users don't fully see the impact their scrolling has on their sleep.

5.3.12 I would sleep better if I stopped using social media at night.

Options	Responses in Numbers	Percentage (%)
Strongly Disagree	23	12.9

Disagree	21	11.8
Neutral	45	25.3
Agree	43	24.2
Strongly Agree	46	25.8
Total	178	100

Interpretation: Based on the data above, Half of the people (50%) believe they would sleep better if they avoided social media at night, reflecting self-recognition of the problem.

6. Limitations

While this study provides important information into the relationship between social media usage and sleep deprivation among adolescents, it also has several limitations like firstly, the sample was collected using convenience sampling, which may not fully represent the wider adolescent population. Since participants came from different cultural and national backgrounds, the diversity of responses may have masked certain regional or gender-specific patterns in social media use and sleep behaviors. Second, the reliance on self-reported data introduces the possibility of demand characteristics like: The expectancy effect, The social desirability effect, The “screw you” effect, etc as participants may underreport or overestimate their media habits and sleep quality. Third, the cross-sectional design limits the ability to establish reason between social media usage and sleep deprivation. While correlations were identified, it is not possible to determine whether social media use directly caused poor sleep, or whether students with pre-existing sleep difficulties were more likely to engage with social media. Additionally, While a Likert scale provided measurable insights, it lacked the depth of qualitative responses that could explain why students make certain choices like scrolling late at night despite recognizing its negative effects, or factors like academic stress, family dynamics, and offline routines may be underrepresented. Additionally, the research did not account for differences in types of social media activity (active chatting vs. passive scrolling), which could have varying impacts on sleep outcomes.

7. Future directions

Future research should address these limitations by using probability sampling techniques like stratified sampling to ensure more numbers of representative samples and by expanding the study to include rural and underserved populations with different access patterns, Additionally, future research should focus on adopting a longitudinal design to better establish the relationship between social media usage and sleep patterns as tracking participants over time whether social media use directly caused poor sleep, or whether students with pre-existing sleep difficulties were more likely to engage with social media or if differences in types of social media activity (active chatting vs. passive scrolling), which could have varying impacts on sleep outcomes.

Moreover, access to participant data such as screen-time tracking apps or wearable sleep monitors, will minimize reliance on self-reports and reliability of the study. Furthermore, as mentioned, reliances on self-reported data increase the probability of demand characteristics and to lessen the chance of demand characteristics a single-blind/double-blind study where

participants and/or researchers don't know the study's true purpose or group assignments should be implemented. Finally, cross-cultural comparisons would be valuable, as cultural norms and parental expectations likely influence digital habits and sleeping habits. By pursuing these directions, future research can be more reliable and increase validity.

8. Discussion

This research successfully achieved its primary objectives, providing a clear quantitative picture of the relationship between social media usage and sleep deprivation among adolescents. The first objective was to understand the factors influencing social media usage and it was achieved, as results showed that the majority (71.9%) primarily used social media for entertainment rather than academic purposes. More than half of the respondents admitted to losing track of time (62.8%) or using social media even when they had important tasks to complete (53.4%), both strong indicators of problematic or addictive patterns (Kolhar et al., 2021; Bozzola, 2022). These findings align with existing literature suggesting that adolescents often prioritize social media over healthier routines, such as timely sleep, reinforcing the risk of sleep deprivation (Exelmans & Van den Bulck, 2018).

The second objective, to examine the impact of social media on sleep deprivation, was also largely supported by the data. A clear link was established where 56.1% of respondents check social media right before sleep, 62.3% use it while in bed, and this behavior correlates with reported sleep issues. A majority (57.3%) sleep less than the recommended 7 hours, and half (50%) wake up feeling tired. Crucially, behaviors indicative of "sleep displacement" (Exelmans & Van den Bulck, 2018) were prevalent, with 59.5% staying up late even when they need to wake up early and 54.5% continuing to scroll despite knowing they should sleep. This positively correlates increased nighttime social media habits to sleep deprivation.

The third objective was to understand the impact of excessive social media usage at night on the energy and enthusiasm level, with 48.8% reporting daytime sleepiness, demonstrating the real-world consequence of poor sleep on adolescent alertness and enthusiasm. The findings are highly useful for educators, parents, and public health officials in rethinking digital literacy and healthy sleep routine management among adolescents as it can encourage awareness programs about digital overuse and its impacts within schools, and developing structured interventions to reduce social media overuse.

9. Conclusion

In conclusion, this study effectively confirms a strong relationship between social media overuse and sleep deprivation among adolescents. It was evident that late-night use, particularly entertainment-focused passive scrolling, was a common behavior contributing to reduced rest and greater fatigue during the day. This pattern not only weakens academic performance but also risks broader mental and physical health consequences (Weaver et al., 2018; Royant-Parola, 2017). Although many adolescents demonstrated awareness of this issue, the persistence of such habits suggests that self-regulation is difficult, reinforcing concerns about the addictive nature of social media.

Ultimately, this study contributes to the growing body of evidence that the balance between digital engagement and healthy sleep is a crucial factor in adolescent wellbeing, making it essential to address that adolescent sleep deprivation requires a direct focus on moderating nighttime social media use.

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