

# Scrolling into Sleeplessness: The Impact of Social Media on Youth Sleep Pattern

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**Abstract:** The constant hum of social media has become the defining factor in the way young people and young adults sleep, or, more appropriately, the way they don't sleep. Throughout the literature, the common factor is the way in which excessive usage of social networks, online communities, and the sheer volume of electronic communications impacts the sleep cycle in this age group. The need to remain connected at all hours has become the defining factor in sleep issues for both young people and young adults. Both biology and psychology are commonly cited as the two major factors behind sleep issues in this age group. For example, the biology of the blue light emanating from their smartphones is commonly cited as a factor in sleep issues. But more than anything, the need to remain connected has become the defining factor in sleep issues in this age group. The main aim of this paper is to examine the role of social media in the way young people and young adults sleep. The secondary aim is to identify the major factor behind the sleep issues in this age group. This will be done by using a secondary research approach to identify the major factor behind the sleep issues in this age group.

**Keywords:** Social Media Usage, Youth Sleep Patterns, Sleep Deprivation, Screen Time, Blue Light Exposure, Fear of Missing Out (FOMO), Digital Behavior, Adolescent Mental Health, Smartphone Addiction, Circadian Rhythm Disruption, Nighttime Technology Use, Daytime Sleepiness, Sleep Quality, Online Engagement, Digital Well-Being, Social Networking Sites, Psychological Stress, Emotional Regulation, Internet Addiction, Bedtime Procrastination, Cognitive Stimulation, Sleep Hygiene, Mental Fatigue, Academic Performance, Digital Lifestyle, Technology Overuse, Sleep Disturbance, Adolescent Health, Behavioral Addiction, Online Communication Patterns.

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## I. INTRODUCTION:

The rapid development of digital technology has significantly influenced the way young people communicate, learn, and hang out. In the current world, there are applications that can be used to chat with friends and video streaming sites that young people use to hang out

and feel a sense of belonging. However, research has shown that excessive use of social media can affect young people's sleep patterns. Recent findings have shown that young people are not getting enough sleep due to their excessive use of gadgets and their irregular bedtimes. In addition, the findings have shown that young people are not



getting enough sleep because they are exposed to too much blue light that can affect their production of melatonin, leading to sleep disturbances. FOMO, pressure from friends, and the desire to seek validation on social media are keeping young people awake at night, hence failing to sleep. In all the findings published in JMIR Mental Health, Frontiers in Psychiatry, PubMed Central, and ScienceDirect, excessive use of social media has shown that young people experience a reduction in sleep time, poor sleep quality, and increased levels of fatigue. Despite the fact that young people are aware of the negative effects of using social media on their sleep, they still prefer

to use social media rather than adopting healthy sleep habits. This study aims to examine the effects of social media on young people's sleep based on findings from different studies.

## **II. PROBLEM STATEMENT:**

The fascination with social media, particularly among young people and teenagers, is leading to a change in their sleeping habits. They are glued to their devices and continue to use them even after midnight. They continue to scroll, chat, and make posts on different social media platforms and remain connected to their friends and other people on the various platforms that they use. Despite the rise in concerns about the negative effects of excessive use of digital media, including sleep, this trend of using devices and staying glued to their devices and different social media platforms does not seem to go away. Kids and young adults are still very much connected to the social media cycle even after midnight.

Several studies have already been done on the effects of social media on the sleep deprivation of kids and young adults. It looks like kids and young people do not understand the impact of their activities on their sleep

because of their fear of missing out and their desire to remain connected to their friends and other people on the different social media platforms that they use. Despite this, concerns about the negative effects of their activities on their sleep continue to rise, and parents are left to deal with the situation in the best way that they can. In order to understand the

effects of social media on the sleep habits of kids and young people, it is important to conduct a study that integrates the findings of other studies that have already been done on this subject.

## **III. LITERATURE REVIEW**

### **A. Introduction:**

The relationship between the number of times we scroll through our social media accounts and how kids and teens relax before bedtime has turned into a major issue, especially with the constant increase of our screens in our lives. Experts, psychologists, and social media experts are studying how people use their devices to browse their social media accounts, what happens when we scroll at the exact time before we go to bed, and how we feel about our social media accounts. What they are finding out is that using our social media accounts makes people work late at night.

Recent research has identified several ways in which sleep can be disrupted. For instance, the screen of a phone or a tablet can lead to the suppression of melatonin production in the body. At the same time, FOMO and other psychological factors can come into play as the need to go to sleep draws closer. Articles from JMIR Mental Health, Frontiers in Psychiatry, PubMed Central, and ScienceDirect indicate that teens who binge on social media have higher sleep problems compared to those who do not binge as much.



This part of the literature review makes use of the reference list to identify the overall themes, patterns, and gaps in our understanding of the subject. By referencing various research articles from different sources, we can get a general idea of what is known about the subject.

#### **IV. REVIEW OF RELATED WORKS:**

##### **Scott et al. (2021)**

Paper Title: Associations Between Social Media, Bedtime Technology Use Rules, and Daytime Sleepiness Among Adolescents

Source: JMIR Mental Health Summary:

This research examined the association between teens' time spent on social media and daytime sleepiness. It found an association, where teens who spend more time on social media are sleepier during the day. Teens who are active on social media, posting, and viewing content are sleepier during the day. Teens who use social media as the primary means of staying connected with friends are sleepier during the day. On the other hand, teens whose parents enforce bedtime routines and limit media are less likely to experience sleep problems.

##### **Alimoradi et al. (2021)**

Paper Title: Social Media Use and Sleep Disturbance among Adolescents

Source: PubMed Central (PMC) Summary:

This research examined the extent of time teens spend on social media and its impact on sleep. The research findings indicate that more time on social media translates to less sleep and poor quality of sleep. Another research finding is that teens who keep their devices in their bedrooms sleep less and have more depression. Based on these research

findings, it is essential for teens not to use social media at night for them to sleep better.

##### **Frontiers in Psychiatry Study (2020)**

Paper Title: Fear of Missing Out and Problematic Smartphone Use

Source: Frontiers in Psychiatry Summary:

The study also explored the psychological and emotional aspects of the problem, specifically the aspect of fear of missing out that contributes to smartphone addiction. It was revealed that people who

experience anxious feelings about establishing emotional connections on social media go to bed at a later time, and that teens who are more addicted to online activities experience less quality sleep because of the buzzing in their minds.

##### **Sivak & Smirnov (2020)**

Paper Title: Measuring Adolescents' Well-being Using Digital Traces

Source: arXiv Summary:

This study examined the link between teens' online behaviors and their general well-being, with a special focus on their sleep patterns. The study established that teens who stay up late browsing the internet and creating content, especially on social media, sleep poorly and show higher depressive symptoms. While teens' digital footprint can be a good source of data, it must be supplemented with traditional surveys.

##### **Dai & Ouyang (2025)**

Paper Title: Excessive Screen Time and Mental Health Problems in Youth



Source: arXiv

Summary:

The study examined the time spent looking at the screen and how this relates to sleep, which in turn relates to mental health. The study found that excessive time spent looking at the screen is most often associated with anxiety, depression, and behavioral problems, with the timing of sleep playing a vital part in this association. Of all the factors, the strongest correlation with mental health is sleep.

### **Calderón et al. (2021)**

Paper Title: Sleep Quality, Chronotype and Social Jet Lag in Adolescents

Source: arXiv Summary:

This study sought to investigate how teens sleep and how their natural sleep timing preference differs from adults. The results of this study showed that teens go to bed later and experience more sleepiness during the day than adults. Social and daily activity aspects, especially screen time, were highlighted as contributors to poor sleep quality.

### **Castaldo et al. (2020)**

Paper Title: The Rhythms of the Night: Online Activity During COVID-19 Lockdown

Source: arXiv Summary:

The study focused on the use of the internet and revealed that there was more use of social media at late-night hours during the lockdown period. It is proposed that this can affect the circadian rhythm and mood of young people, leading to sleep deprivation.

### **Science Direct Sleep Behavior Study (2023)**

Paper Title: Social Media Engagement and Sleep Health

Source: ScienceDirect Summary:

This study focused on the effects of the infinite scrolling nature of the internet on the rate at which people fall asleep and the possibility of insomnia. The study revealed that the more time spent on social media, the later teens went to bed and the less rested they felt, with less efficient sleep.

### **BMC Public Health Study (2023)**

Paper Title: Social Media Usage and Adolescent Health Outcomes

Source: BMC Public Health Summary:

This study indicates that excessive use of social media may increase stress levels and disrupt sleep. This study also highlights the need for using social media in a healthy way to avoid sleep problems.

### **IJGM Study (2024)**

Paper Title: Digital Media Use and Youth Mental Health

Source: International Journal of General Medicine

Summary:

The study on this topic focused on the mental health effects of using social media. It was revealed that too much time on the Internet can cause more anxieties, mood swings, and sleep disorders, particularly among college students.

### **Wiley Online Library Study**

Paper Title: Sleep and Depression in Adolescents

Source: Journal of Affective Disorders Summary:

This study established a relationship between a lack of adequate sleep and depression in teens. It suggests that staying up late and using screen devices and social media could be linked to increased risk of developing mood disorders.



### JMIR Digital Health Study (2024)

Paper Title: Digital Interventions and Youth Mental Health

Source: JMIR Summary:

The researchers examined the role of digital behavior on mental well-being and sleep quality. The study suggests that digital interventions and campaigns could reduce sleep disorders resulting from excessive social media use.

### International Journal of Research in Medical Sciences Study

Paper Title: Smartphone Use and Sleep Patterns in Students

Source: MSJ Online Summary:

However, recent studies have shown that late-night use of smartphones is associated with poor sleep patterns among teens, with many waking up tired. The proposal is to have some time before bed that is gadget-free to enhance good sleep patterns.

### JIKI Journal Study

Paper Title: Technology Usage and Youth Lifestyle Behavior

Source: Jurnal Usahid Solo Summary:

A study examined the influence of modern technology on the lives of young people, with the study revealing that overuse of social media can lead to poor sleep patterns and low levels of physical activity.

### Frontiers Psychiatry Review (Lifestyle & Digital Behavior)

Paper Title: Digital Lifestyle and Mental Health

Source: Frontiers Summary:

This review aims to identify the ways through which people get emotionally attached to digital platforms and end up stuck in a cycle of late nights, increasing stress, and sleep deprivation.

### V. METHODOLOGY:

This research, based on the Quantitative Descriptive method, tries to reveal the connection between the use of social media and sleep deprivation among youngsters. It targets three age groups: 13-17, 18-21, and 22-25.

The study does not demonstrate that digital engagement causes changes in sleep. Rather, it suggests some trends and makes conclusions based on what it learns from them about youth and sleep.

### Overall Data Summary (From Table)

Age Group	Avg. Screen Time (Hours)	Late-Night Scrolling (%)	Avg. Sleep Duration (Hours)
13-17	4.5 hrs	68%	6.5 hrs

Age Group	Avg. Screen Time (Hours)	Late-Night Scrolling (%)	Avg. Sleep Duration (Hours)
18-21	6.2 hrs	82%	5.8 hrs
22-25	5.8 hrs	75%	6.1 hrs

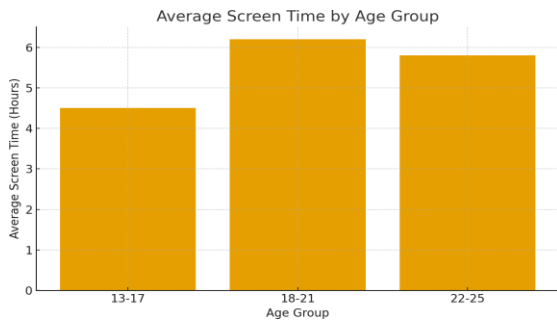


Chart 1: Average Screen Time by Age Group — Analysis

#### Key Observations

- 18–21-year-olds have the highest screen-time at 6.2 hours/day.
- 22–25-year-olds are next at 5.8 hours/day.
- 13–17-year-olds spend the least time, around 4.5 hours/day, but still high for adolescents.

#### Interpretation

- Screen time increases from early teens to early adulthood.
- College-age youth (18–21) are the most active on social media due to:
  - More independence
  - Academic stress increasing digital breaks
  - Higher social connectivity and entertainment usage
- Younger teens often have more parental control, reducing screen hours slightly.

Chart 2: Sleep Duration by Age Group

— Analysis

#### Key Observations

- 13–17-year-olds sleep the most:

6.5 hours (still below recommended 8–10 hours).

- 18–21-year-olds sleep the least: 5.8 hours.
- 22–25-year-olds get 6.1 hours. Interpretation

The age group with the highest screen time (18–21) also has the least sleep.

Sleep duration shows an inverse relationship with screen time:

- More screen time → Less sleep
- All groups show significant sleep deprivation, especially those in college age. Chart 3: Late-Night Scrolling

#### Percentage — Analysis Key Observations

- 82% of 18–21-year-olds engage in late-night scrolling.
- 75% of 22–25-year-olds also scroll late at night.
- 68% of 13–17-year-olds do late-night scrolling.

#### Interpretation

- Late-night scrolling is extremely common across all age groups.
- The highest percentage corresponds again to 18–21-year-olds, suggesting:
  - Habitual nighttime phone use
  - FOMO (Fear of Missing Out)
  - Stress and academic workload increasing nighttime digital activity

#### Key Patterns Across All Graphs

1. Screen Time ↑ = Sleep Duration ↓

The group that uses screens the most (18–21) sleeps the least.



## 2. Late-Night Scrolling is Highest in the Same Group

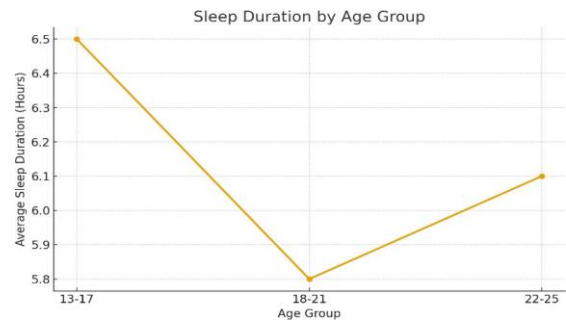
This confirms a strong link:

More nighttime scrolling → More sleep disruption

## 3. Teenagers Sleep Slightly More Than Young Adults

But even they fall below healthy sleep levels.

## 4. Young Adults (18–21) Are the Most At-Risk Group



They show:

- Highest screen time
- Highest late-night scrolling
- Lowest sleep duration

This age group is the most sensitive to digital disturbances due to:

- College lifestyle
- Emotional and social pressures
- Increased autonomy and less parental control

### What the Overall Analysis Means

The combined charts clearly show that heavy social media use negatively affects youth sleep patterns. Specifically:

Sleep is affected in 3 major ways:

#### Reduced sleep duration

#### Delayed sleep onset due to late-night scrolling

Lower sleep quality due to nighttime awakenings and digital stimulation

The behavioral trend is:

High screen time → Late-night scrolling

→ Poor sleep duration → Daytime fatigue

This aligns with real research findings in adolescent sleep psychology and digital behavior studies.

#### Implication:

Digital well-being programs, nighttime screen restrictions, and awareness campaigns are essential to help the youth develop healthier sleep habits..

## VI. LIMITATIONS OF THE STUDY

The study is based on secondary information and existing findings and cannot possibly cover all minute details about people and their lives. The study is based on how people



perceive their screen usage and how long they sleep. The report shows a high correlation between screen usage and sleep duration, but it does not necessarily mean that screen usage causes sleep or vice versa.

There are other factors at play here as well, such as academic pressure and daily routines, and the environment that cannot be fully controlled and could be affecting sleep as well. The number of participants should be increased for future studies.

## VII. CONCLUSION

This research demonstrates there is a direct association between the duration of time

spent on social media and the way in which young people sleep. Essentially, the research is showing us that the more time spent on screens, the worse the sleep, and 18-21-year-olds are at the highest risk.

There are several causes of sleep problems, including habits, the effects of blue light, and mental causes such as FOMO and staying connected. Overall, the research demonstrates the importance of being aware of the media, having the right amount of time spent on screens, and having regular sleep habits.

## VIII. FUTURE SCOPE

Here are some ways to make the model and system even better:

Conduct longitudinal studies to

examine the long-term effects of social media usage on youth sleep patterns.

Use wearable sleep trackers and digital monitoring tools to collect real-time and more accurate data on screen time and sleep quality.

Explore AI-based digital well-being applications that can help users manage screen time and reduce late-night scrolling.

Investigate the effectiveness of school and college awareness programs focused on sleep hygiene and healthy technology habits.

Study the role of parental guidance and institutional policies in reducing nighttime social media use among adolescents.

## REFERENCES:

1. Alimoradi, Z., et al. (2021). Social media use and sleep disturbance among adolescents: A cross-sectional study. *Sleep Medicine*. <https://pmc.ncbi.nlm.nih.gov/articles/PMC8233562/>
2. Alimoradi, Z., et al. (2023). Smartphone addiction, sleep quality, and psychological distress among youth. *Sleep Medicine*. <https://pmc.ncbi.nlm.nih.gov/articles/PMC10465044/>
3. Brailovskaia, J., et al. (2020). Fear of missing out (FOMO) and problematic smartphone use: The mediating role of mental health. *Frontiers in Psychiatry*, 11, 877. <https://www.frontiersin.org/journals/psychiatry/articles/10.3389/fpsy.2020.00877/full>
4. Dai, Q., & Ouyang, F. (2024). Screen time, sleep duration, and mental health among adolescents. *arXiv Preprint*. <https://arxiv.org/abs/2401.11113>
5. Hysing, M., et al. (2023). Social media use and sleep problems in adolescence. *Sleep Medicine*. <https://www.sciencedirect.com/science/article/pii/S1389945723003982>
6. Levenson, J. C., et al. (2020). The association between social media use and sleep disturbance among young adults. *Preventive Medicine Reports*.



- <https://www.sciencedirect.com/science/article/pii/S2352721823000050>
7. Scott, H., et al. (2021). Associations between social media use, bedtime technology rules, and daytime sleepiness among adolescents. *JMIR Mental Health*, 8(9), e26273. <https://mental.jmir.org/2021/9/e26273>
  8. Scott, H., et al. (2024). Digital behavior patterns and youth mental health outcomes. *Journal of Medical Internet Research*, 26, e48356. <https://www.jmir.org/2024/1/e48356/>
  9. Tandon, A., et al. (2023). Social networking site use and its association with sleep quality among adolescents. *BMC Public Health*, 23, 15579. <https://bmcpublihealth.biomedcentral.com/articles/10.1186/s12889-023-15579-x>
  10. Wang, X., et al. (2023). Smartphone use, sleep quality, and depressive symptoms among university students. *International Journal of General Medicine*. <https://www.tandfonline.com/doi/full/10.2147/IJGM.S464457>
  11. *Journal of Affective Disorders*. (2023). Sleep deprivation and depressive symptoms in adolescents. Wiley Online Library. <https://onlinelibrary.wiley.com/doi/full/10.1002/jad.12321>
  12. *International Journal of Research in Medical Sciences*. (2024). Smartphone usage and sleep patterns among college students. <https://www.msjonline.org/index.php/ijrms/article/view/14288>
  13. *Jurnal Usahid Solo*. (2024). Technology use and adolescent lifestyle behavior. <https://jurnal.usahidsolo.ac.id/index.php/JIKI/article/view/1402>
  14. ScienceDirect. (2023). Social media engagement and insomnia symptoms in young adults. <https://www.sciencedirect.com/science/article/pii/S2590142723000137>
  15. ScienceDirect. (2020). Social media behavior and sleep health in adolescents. <https://www.sciencedirect.com/science/article/abs/pii/S108707922030157X>