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The effects of screen time on teen sleep

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AUTHOR BIOGRAPHY

My name is Boxuan Song, and I'm a 12th-grade student currently studying in Canada. I'm originally from China and have developed a deep interest in psychology and neuroscience. I hope to become a neuroscientist in the future and explore the complex relationship between the brain and human behavior. Outside of academics, I'm a dog lover who enjoys cooking and baking, especially creating new treats to share with friends and family. My curiosity about the mind and my love for animals continue to shape both my academic goals and personal passions.

ABSTRACT

This review synthesizes findings from 16 studies published between 2020 and 2025 to investigate how teenage screen use affects sleep outcomes. The goal was to examine the effects of screen usage on sleep length, quality, circadian rhythms, and disturbances connected to pandemics. Studies examining screen-related sleep outcomes in adolescents aged 12 to 19 using quantitative or mixed-method approaches were found through a systematic search of databases, including PubMed and ScienceDirect. The results showed that longer sleep length and worse sleep quality were caused by more screen time, especially interactive activities like social media and gaming. Sleep onset was delayed, and the production of melatonin was reduced by blue light exposure, while REM cycles were disturbed, and nighttime awakenings were increased by cognitive stimulation via interactive material. Misalignments in circadian rhythm were especially noticeable when screens were used right before bed. The effects were made worse by the COVID-19 pandemic, as recreational screen use and remote learning resulted in irregular sleep patterns and heightened sleep difficulties. These results highlight how screen time affects sleep through a combination of behavioral and physiological factors. The data show that targeted interventions are necessary to minimize pre-sleep screen exposure, even though other studies questioned the notion that all screen use is harmful. To lessen these negative impacts and safeguard long-term sleep health, it is crucial to encourage healthier digital behaviors among teenagers.

Keywords*: Sleep pattern*, *sleep quality*, *teenage*, *adolescence*, *sleep duration*, *Circadian rhythm*, *health*, *behavior*, *psychology*

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THE EFFECTS OF SCREEN TIME ON TEEN SLEEP

In the modern era, teenagers are growing up surrounded by digital devices. Concerns have been raised over the widespread use of screens and their effects on teenage health, specifically on sleep patterns, which are crucial for cognitive development, emotional stability, and physical growth (Alonzo et al., 2021; Braustsch et al., 2022). In addition to managing heavy schoolwork, social life, and extracurricular tasks, adolescents also experience difficulties during this time due to biological changes in their sleep patterns that naturally cause them to sleep later (Chen et al., 2024; Hartstein et al., 2024). These issues are worsened by excessive screen time, particularly gaming, social media use, or late-night streaming, which are linked to delayed sleep onset and poor sleep quality (Tkaczyk et al., 2023; Marciano & Camerini, 2021). Further interfering with healthy sleep habits is the continuous availability of stimulating content on electronic devices (Li et al., 2024; Poirier et al., 2023).

Teenagers who use screens excessively are exposed to blue light, which decreases melatonin production, a vital hormone for starting sleep (Caumo et al., 2020; Mac Carthaigh et al., 2020). Chronic sleep deprivation and related health risks, including obesity, depression, and poor academic performance, might arise from disruption of circadian rhythms when combined with behavioral patterns like bedtime procrastination (Nagata et al., 2024; Khan et al., 2023). Beyond individual habits, external factors may potentially intensify these sleep disturbances. The COVID-19 epidemic was one such big effect that changed everyday routines and increased reliance on digital technologies. Recent research studies have demonstrated how the COVID-19 epidemic exacerbated these trends, with extended social media use and distant learning leading to significant changes in teen sleep patterns worldwide (Mac Carthaigh et al., 2020; Otsuka et al., 2021).

The relationship between screen time and sleep is significant, especially for teenagers. Teenagers who don't get enough sleep are more likely to suffer from emotional instability, poor academic performance, and long-term health issues like diabetes and cardiovascular diseases (Li et al., 2024; Hartstein et al., 2024). Furthermore, sleep problems have been associated with increased depression, anxiety, and attention deficiencies, all of which can significantly impact their quality of life (Braustsch et al., 2022; Poirier et al., 2023). Addressing the effects of screen use on sleep may promote healthier lifestyle choices, enhance academic achievement, and improve adolescent mental health outcomes (Marciano & Camerini, 2021; Otsuka et al., 2021).

This paper aims to review the connection between teenage sleep patterns and screen time, focusing on how screen use affects sleep, as well as big changes in society. The research questions focus on what processes connect screen time to sleep issues. What effects do various screen activities (e.g., social media versus gaming) have on sleep quality? The review identifies these trends to suggest measures for reducing the detrimental effects of screen use on adolescent sleep.

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OVERVIEW OF SLEEP

According to Chen et al. (2024), sleep is a dynamic biological process that is essential for emotional control, physical health, and cognitive performance. Along with various neurological and hormonal processes, the circadian rhythm and the homeostatic sleep drive are the main factors influencing sleep regulation. The hypothalamic suprachiasmatic nucleus (SCN) regulates the circadian rhythm, which synchronizes the body's internal clock with external light signals and affects the release of the hormone melatonin, which promotes sleep (Li et al., 2024). Artificial blue light from electronics reduces the production of melatonin, which delays the onset of sleep (Caumo et al., 2020; Otsuka et al., 2021). According to Hartstein et al. (2024), the homeostatic sleep drive builds up over the day and raises sleep pressure until rest is reached. There are two main types of sleep cycles, which recur in around 90-minute cycles: rapid eye movement (REM) sleep and non-rapid eye movement (NREM) sleep (Nagata et al., 2024). Brain wave activity changes in each sleep stage (see Figure 1), reflecting distinct patterns of neural function throughout the night. Stage N1 (light sleep) is a transitional phase characterized by alpha waves and decreased muscle activity (Poirier et al., 2023; Marciano & Camerini, 2021). Stage N2 includes theta waves, sleep spindles, and K-complexes, which are crucial for memory consolidation. Stage N3 (slow-wave sleep or deep sleep) is dominated by delta waves, essential for immune function and physical recovery (Mac Carthaigh et al., 2020). Later in the sleep cycle, REM sleep enhances dream activity, emotional control, and cognitive processing. It is characterized by brain wave activity that is similar to awake (Tkaczyk et al., 2023).

For adolescents, 8 to 10 hours of sleep per night is recommended; however, biological and environmental factors often disrupt this pattern (Braustsch et al., 2022). Teenagers find it more difficult to fall asleep before midnight because puberty naturally causes the circadian rhythm to move forward by one to two hours, delaying the production of melatonin (Alonzo et al., 2021; Gull & Sravani, 2024). Late-night screen time aggravates this condition, called delayed sleep phase syndrome (DSPS), which results in shorter sleep durations and more fragmented sleep (Pagano et al., 2024). Teenagers who don't get enough sleep have been shown to have worse cognitive function, have trouble controlling their emotions, and be more likely to suffer from obesity, depression, and anxiety disorders (Khan et al., 2023; Poirier et al., 2023). Furthermore, naps during the day, especially those lasting more than half an hour or taken after 3 PM, interfere with nocturnal sleep cycles by reducing sleep pressure, which causes additional delays in the initiation of sleep (Nagata et al., 2024). To promote the health and well-being of teenagers, it is essential to keep regular sleep cycles, minimize screen time before bed, and optimize sleep surroundings (Otsuka et al., 2021).

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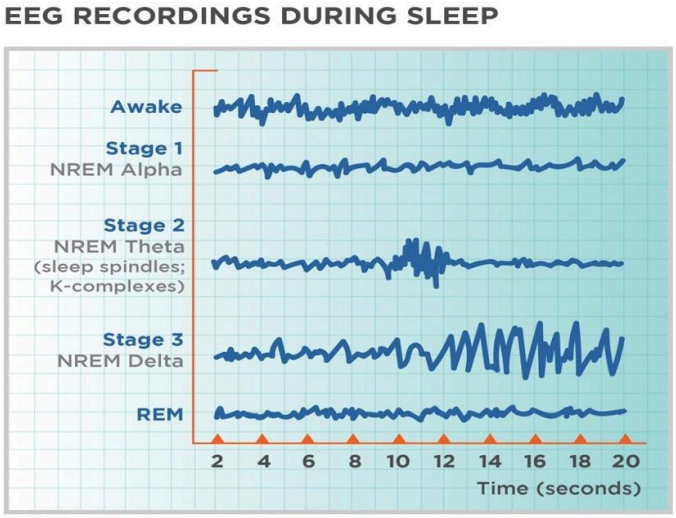
Figure 1
EEG Wave Patterns Across Sleep Stages



Note. From "Stages of sleep," by Lumen Learning, n.d., (https://courses.lumenlearning.com/waymaker-psychology/chapter/stages-of-sleep/). CC BY 4.0.

RESEARCH SELECTION AND METHODOLOGY

This review incorporates the results of 17 studies that explore the relationship between adolescent screen use and sleep outcomes. Searches in databases such as PubMed and ScienceDirect were used to find relevant research. The search terms included "screen time," "adolescents," "teenagers," "sleep quality," "insomnia," and "social media." Only research published in English between 2020 and 2025 was covered. The inclusion criteria for the selected studies are as follows: focus on adolescents ages 12 to 19; analysis of the effects of screen time or device use on sleep-related outcomes (such as timing, quality, and duration); and application of quantitative and mixed-method approaches with data support. Studies that did not explicitly relate screen time to sleeping, only focused on adults or younger children, or were categorized as opinion writings, theses, or editorials were all excluded. To ensure accurate results, each study was carefully assessed for methodological rigor, sample size sufficiency, and data collection procedures.

RESULTS

The findings of this analysis are divided into four key areas: The impact of screen use on sleep duration, sleep quality, and disturbances, circadian rhythm disruption, and the effects of the COVID-19

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Pandemic on adolescent sleep patterns. This framework emphasizes how screen time has a multifaceted impact on sleep quality.

IMPACT ON SLEEP DURATION

Teenagers who spent more than three hours daily on screens, especially right before bed, showed noticeably shorter sleep durations. According to the research, electronic device use in bedrooms has been consistently linked to shorter sleep duration and lower sleep quality. For example, in a research on teenage sleep habits, youth who used their phones in bed at night had delayed sleep onset and reduced total sleep time compared to those who did not (Li et al., 2024; Poirier et al., 2023). Teenagers with an internet-connected device in their bedroom slept for an average of 0.21 hours less each week (Nagata et al., 2024). The timing of screen usage intensifies these impacts; teens who play video games or browse social media late at night frequently put off going to bed, which throws off their sleep schedule. Additionally, adolescents who use screens an hour before bedtime have delayed melatonin release, which throws off their circadian rhythm and reduces their total sleep duration (Mac Carthaigh et al., 2020; Otsuka et al., 2021). Figure 1, extracted from Nagata et al. (2024), shows that leaving the phone ringer on decreased weekly sleep length by an average of 0.27 hours and increased the odds of sleep disruptions by 25% (OR = 1.25, p = 0.046).

Table 1

Bedtime screen use activities and relationship with adolescent sleep patterns

Associations between bedtime screen usage and sleep in the Adolescent Brain Cognitive Development (ABCD) study (N = 9,398)

Bedtime Screen Use Exposures	Total sleep disturbance		Disorders of initiating and maintaining sleep		Weekly sleep duration	
	OR (95% CI)	*p*	B (95% CI)	*p*	B (95% CI)	*p*
TV set or an Internet-connected electronic device in bedroom	1.08 (0.94, 1.25)	.281	−0.03 (−0.18, 0.12)	.729	**−0.21 (−0.28, −0.13)**	**< .001**
Phone action when ready to go to sleep						
Turn the phone off	reference	reference	reference	reference	reference	reference
Put the ringer on silent or vibrate	0.96 (0.80, 1.16)	.668	−0.06 (−0.27, 0.15)	.563	**−0.15 (−0.26, −0.05)**	**.005**
Leave the ringer on	**1.25 (1.00, 1.56)**	**.046**	0.15 (−0.10, 0.40)	.237	**−0.27 (−0.40, −0.13)**	**< .001**
Put it outside of the room where I sleep	1.11 (0.92, 1.34)	.292	**0.20 (0.01, 0.39)**	**.043**	0.05 (−0.03, 0.14)	.227
Past week engagement in bed before going to sleep						
Watch or stream movies, videos, or TV shows	1.06 (0.99, 1.13)	.096	0.00 (−0.08, 0.07)	.915	**−0.10 (−0.14, −0.06)**	**< .001**
Play video games	1.08 (0.98, 1.18)	.111	0.00 (−0.10, 0.11)	.926	**−0.14 (−0.19, −0.08)**	**< .001**
Play music	**1.10 (1.04, 1.17)**	**.002**	**0.11 (0.03, 0.18)**	**.004**	**−0.10 (−0.14, −0.07)**	**< .001**
Talk on the phone or text	**1.13 (1.05, 1.23)**	**.002**	**0.12 (0.03, 0.22)**	**.012**	**−0.17 (−0.22, −0.12)**	**< .001**
Spend time online on social media (e.g., Facebook)	**1.10 (1.01, 1.20)**	**.025**	0.09 (−0.00, 0.19)	.058	**−0.21 (−0.26, −0.16)**	**< .001**
Spend time in chat rooms	1.14 (0.99, 1.31)	.067	0.15 (−0.02, 0.32)	.082	**−0.21 (−0.30, −0.11)**	**< .001**
Browse the Internet, Google (not school-related)	0.99 (0.88, 1.11)	.813	0.03 (−0.11, 0.17)	.668	**−0.16 (−0.24, −0.09)**	**< .001**
Use a computer/laptop for studying	1.01 (0.93, 1.10)	.857	0.00 (−0.10, 0.09)	.923	**−0.06 (−0.11, −0.00)**	**.034**
Reading	0.97 (0.91, 1.03)	.352	0.05 (−0.02, 0.12)	.140	**0.07 (0.03, 0.10)**	**< .001**
Woken up by phone calls, text messages, or e-mails after trying to go to sleep	0.98 (0.87, 1.11)	.788	−0.06 (−0.20, 0.07)	.357	**−0.16 (−0.24, −0.08)**	**< .001**
Used phone or other device when woke up during the night	1.11 (0.99, 1.24)	.081	0.13 (−0.01, 0.27)	.076	**−0.18 (−0.25, −0.10)**	**< .001**
Total Recreational Screen Time	**1.02 (1.01, 1.04)**	**.002**	**0.02 (0.00, 0.03)**	**.019**	**−0.03 (−0.04, −0.02)**	**< .001**

Bold indicates $p < .05$. B = coefficient from ordered logistic model (disorders of initiating and maintaining sleep) or linear regression model (weekly sleep duration). Models represent the abbreviated output from the regression models including adjustment for age, sex, race/ethnicity, household income, parent education, adverse childhood experiences, depression symptoms, melatonin use, study site, and the respective sleep variable at Year 2. Total sleep disturbance and disorders of initiating and maintain sleep are based on caregiver report and sleep duration is based on adolescent report. Propensity weights from the Adolescent Brain Cognitive Development Study were applied based on the American Community Survey from the US Census.

Note. From "Bedtime screen use behaviors and sleep outcomes in early adolescents: A prospective cohort study," by J. M. Nagata et al., 2024, Journal of Adolescent Health, 75(6), 654, (https://doi.org/10.1016/j.jadohealth.2024.06.006).

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Alongside these conclusions, Li et al. (2024) showed that extended screen use (more than three hours daily) made sleep duration reductions even worse. Long-term blue light exposure in adolescents resulted in melatonin suppression of up to 30%, delaying the onset of sleep by an average of 60 minutes (Li et al., 2024). Media multitasking before bed, such as combining gaming with texting or browsing, further shortens the amount of time that people sleep overall, according to Braustsch et al. (2022). Similar to Chen et al. (2024), who found that regular late-night device use delayed sleep by an average of 45 minutes as compared to limited users, these interruptions were more obvious when devices were used in dark environments or with high brightness settings.

Adolescents who use late-night devices often over time may experience delayed sleep initiation and chronic sleep debt (Alonzo et al., 2021). These patterns were associated with cumulative sleep deprivation over time, raising the risk of cognitive and metabolic problems. This suggests that regular screen usage alters behavioral sleep patterns, which has both immediate and long-term repercussions on physical health.

Moreover, interactive screen activities like gaming were more strongly related to shorter sleep duration than passive activities like watching TV, according to (Tkaczyk et al. 2023). Gaming before bed reduced sleep duration by an average of 0.14 hours each night ($p < 0.001$) for adolescents (Nagata et al., 2024). The methodological framework emphasizes the importance of circadian synchronization and highlights these behavioral patterns as major causes of irregular sleep patterns.

The methodological framework that emphasizes nighttime habits as a crucial factor impacting circadian synchronization and sleep quality corresponds with these findings. These particular activities, like late-night gaming or texting, can be addressed by interventions to successfully lessen the detrimental effects of screen usage on sleep. These results highlight the necessity of behavioral treatments targeted to decrease evening device use.

SLEEP QUALITY AND DISTURBANCES

Adolescent sleep disruptions and poor sleep quality are significantly correlated with interactive screen use, such as social media or gaming. Due to their cognitive and emotional stimulation, interactive activities, as compared with passive screen use, raise the risk of insomnia symptoms and nightly awakenings. This demonstrates how behavioral factors, especially those involving stimulating content, might interfere with sleep cycles.

Hartstein et al. (2024) further highlighted that teens who participate in interactive activities like late-night texting and gaming have a markedly higher rate of nighttime awakenings. In addition to impairing the quality of sleep, these awakenings interfere with vital REM cycles, which are essential for cognitive development and emotional control (Marciano & Camerini, 2021). Although the effects of passive screen use, like watching TV, were less noticeable, they still contributed to delayed sleep onset times.

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Teenagers who regularly switched between different digital activities before bed were more likely to have disturbed sleep cycles and lower sleep efficiency, according to their findings. Due to persistent cognitive activation from concurrent tasks, multitasking not only delayed the start of sleep but also prolonged intervals of awareness during the night (Braustsch et al., 2022). Caumo et al. (2020) supported this by pointing out that using a smartphone late at night is particularly associated with shorter sleep duration and lower sleep quality as measured by PSQI metrics. Their research also offered a sophisticated understanding of the ways in which different screen time types and durations impact various sleep parameters. Adolescents who used social media before bed, for example, reported lower sleep efficiency and higher sleep latency, but those who used screens for learning had fewer disturbances. These results illustrate the importance of context and intent in reducing the negative impacts of screen time on sleep quality. Their results, which were similar to more general trends found in this analysis, highlighted how extended use of electronic devices at night impairs both sleep latency and continuity.

Furthermore, Gull and Sravani (2024) found that extended screen time, regardless of the activity, led to self-reported sleep problems, such as difficulty falling and staying asleep. The significance of screen-free pre-sleep routines was further supported by the finding that adolescents who utilized social media an hour before bed were twice as likely to report poor sleep quality as their peers (Pagano et al., 2024). These findings collectively highlight how the type and timing of screen time have a significant impact on sleep quality, requiring interventions that promote healthy digital habits.

CIRCADIAN RHYTHM DISRUPTION

Teenagers from digitally intensive societies tended to use screens later in the evening, which directly interfered with circadian rhythms by delaying the onset of sleep. MacKenzie et al. (2022) further connected societal expectations to prolonged digital engagement and mismatched sleep-wake cycles by identifying important obstacles to better sleep habits, such as habitual reliance on electronics for relaxation and fear of missing out (FoMO).

Many studies have demonstrated how screen time affects circadian rhythms. The natural sleep-wake cycle is disturbed when blue light from screens reduces the production of melatonin. Chen et al. (2024) showed that teenagers who regularly used screens late at night reported sleep onset times that were 45 minutes later on average than those of their friends who used screens less often. Additionally, Hartstein et al. (2024) emphasized that the natural circadian rhythm was disrupted by nightly awakenings brought on by interactive screen use, especially gaming and texting. These results highlight the connection between stimulating screen activities and circadian misalignment, which is not just related to screen brightness.

Interactive screen activities disrupted teenagers' REM cycles, which are essential for circadian synchronization, according to Marciano and Camerini (2021). This led to a fragmented sleep architecture and decreased total sleep efficiency. They underlined that extended cognitive engagement with

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interactive information caused a series of circadian misalignments by delaying the natural commencement of REM stages. In contrast to peers who used screens moderately, Otsuka et al. (2021) found that adolescents who used screens for extended periods had delayed sleep phases and a dramatically altered sleep-wake cycle. This delay was particularly evident for those who used screens an hour before bed, which disrupted melatonin synthesis and sleep onset timing disturbances.

Although gaming and other interactive screen activities have been linked to sleep problems, Tkaczyk et al. (2023) did not specify the precise odds of experiencing insomnia symptoms. Rather, more general correlations with delayed sleep initiation and cognitive arousal have been emphasized, suggesting that stimulating content may interfere with the body's regular sleep cycles.

EFFECTS OF THE COVID-19 PANDEMIC

During the COVID-19 pandemic, the effect of screen time on teenage sleep was further exacerbated. Extended usage of digital platforms and remote learning resulted in later bedtimes and irregular sleep habits. Youths in Canada showed a significant drift in sleep duration, which they attributed to their growing dependence on digital gadgets (Mac Carthaigh et al., 2020). Due to the epidemic normalizing prolonged screen time and further interrupting sleep, these findings were uniform globally (Otsuka et al., 2021).

The rise in passive screen activities, such as binge-watching, during the pandemic, was linked to teenagers' delayed sleep initiation and lower overall sleep quality (Marciano and Camerini 2021). Gull and Sravani (2024) similarly found that longer recreational screen use among teens during the pandemic was linked to a higher incidence of sleep issues. According to Chen et al. (2024), the pandemic's psychological effects and rising screen time produced an endless cycle in which heightened anxiety further interfered with sleep patterns. These results highlight how behavioral patterns, psychological pressures, and environmental changes all affect sleep quality.

Teenagers who relied on social media as their primary way of social engagement throughout the epidemic had their sleep disturbances examined by Poirier et al. (2023). By decreasing the natural winding-down period required for sound sleep, their research showed that frequent use of social media before bed delayed sleep phases. The study underlined how prolonged social media surfing before bed leads to fragmented sleep cycles by increasing cognitive stimulation and overnight awakenings. This behavior change was particularly noticeable among teenagers who turned to online social media to deal with loneliness, which made their sleep problems worse. Additionally, MacKenzie et al. (2022) looked at how screen use patterns were affected by pandemics in various cultural contexts and emphasized how cultural norms affected digital habits and nighttime practices.

DISCUSSION

The analyzed studies showed the widespread impact of screen usage on different aspects of teenage sleep. The time-displacement hypothesis, which holds that screen time directly replaces sleep

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hours, is supported by the notable decrease in weekly sleep duration among teenagers who participate in late-night screen activities, as shown by Nagata et al. (2024). Meanwhile, Marciano and Camerini's (2021) substantial correlation between interactive screen activities and disturbed REM cycles emphasizes the combined effects of cognitive stimulation and circadian misalignment.

Sleep disturbances, including delayed sleep onset, reduced total sleep duration, and increased nighttime awakenings, were consistently linked to behavioral patterns, particularly the type and timing of screen use. By postponing bedtime and raising cognitive arousal, social media browsing and gaming made sleep problems worse (Tkaczyk et al., 2023). Passive screen use led to increased sleep latency even though its effects were less severe. This indicates that specific interventions aimed at lowering pre-sleep exposure to interactive devices are required. Furthermore, the physiological mechanisms behind these behavioral influences are highlighted by Li et al.'s (2024) demonstration of how blue light exposure suppresses melatonin synthesis and disrupts the onset of sleep.

Tkaczyk et al. (2023) challenged the widely held belief that using a smartphone before sleeping is always bad for teenagers. Their research tracked participants' researchers to track changes in sleep outcomes from night to night.' In this study, adolescents recorded their screen time and sleep patterns daily, allowing sleep behaviors in real time using an electronic diary approach, demonstrating that using a smartphone did not necessarily lead to worse sleep quality. Longer smartphone use was linked to somewhat longer sleep duration and an earlier sleep onset on some nights, indicating that contextual factors and individual variability are important. This complex viewpoint urges more research into the ways that timing, screen content, and everyday stressors combine to affect sleep results.

Mac Carthaigh et al. (2020) and Chen et al. (2024) provided empirical evidence that the pandemic made these difficulties much more severe. A feedback loop between disturbed sleep and greater screen dependence was created when people's reliance on screens for distant learning and leisure caused major changes in their sleep patterns and elevated psychological stress. To address these long-term effects, systematic solutions are needed, such as sleep education programs implemented in schools, screen-time regulations, and mental health support programs to reduce risks, including academic difficulties and mental health decline. Marciano and Camerini's (2021) substantial correlation between interactive screen activities and disturbed REM cycles emphasizes the combined effects of cognitive stimulation and circadian misalignment.

It is important to acknowledge that this analysis has limitations. First, the variations in study designs, methodology, and outcome measures among the included studies may have made direct comparisons more difficult. For example, while some studies used objective techniques like actigraphy or electronic diaries, others relied on self-reported sleep measurements, which are prone to recall bias. Additionally, because cross-sectional data predominates, causality cannot always be assumed, even though this review finds strong links between screen use and sleep disturbances.

Although they are still scarce, longitudinal investigations like the one conducted by Tkaczyk et al. (2023) provide a deeper comprehension. The review highlights these patterns to suggest ways to

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mitigate the damaging effects of screen use on teenage sleep. The negative impacts may be lessened by employing techniques including establishing screen-free routines for a key hour before bed, limiting blue light exposure with device filters, and encouraging passive rather than engaging material in the evening. Adolescent sleep health may also be improved by carrying out intervention-based research that assesses the effectiveness of behavioral changes through digital curfews or screen time restrictions.

Promoting better screen habits can be greatly supported by school-based interventions, parental involvement, and education campaigns. Future studies should examine the relationship between screen use and mental health and determine individual differences in screen use susceptibility.

CONCLUSION

This review assesses the various effects of screen time on adolescent sleep. The data shows that screen time and type have a significant impact on sleep length, quality, and circadian alignment. The most harmful screen usage was found to be interactive and extended, with serious consequences for both physical and mental health. These issues were made worse by the 2020 epidemic, which increased sleep disruptions and regulated prolonged screen use. Interventions that focus on pre-sleep screen habits and encourage screen-free routines are crucial to reducing these effects. To increase awareness of these concerns and encourage better digital practices among teenagers, educators, parents, and legislators must work together.

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