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Review Paper

Impact of Social Networking Addiction on Cognitive Failure and Sleep Quality in Young Adults

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ABSTRACT

In recent years, social media has become deeply embedded in the everyday lives of young adults. While these platforms offer spaces for connection, self-expression, and entertainment, growing concerns have emerged about their potential impact on psychological well-being. A key area of concern is how excessive social media use affects sleep quality and cognitive functioning. Numerous studies have indicated that increased social networking engagement—especially during nighttime hours—can negatively impact sleep patterns. The constant exposure to blue light, the compulsion to stay connected, and the fear of missing out (FOMO) contribute to delayed sleep onset and reduced sleep duration. For many young adults, bedtime scrolling has become a routine, often at the expense of restorative rest (Levenson et al., 2017; Scott & Woods, 2019). Sleep, in turn, plays a fundamental role in cognitive functioning. Inadequate or disturbed sleep has been associated with issues like impaired memory, decreased attention, and reduced problem-solving abilities (Killgore, 2010). Studies exploring this relationship have found that those who are more active on social media platforms are more likely to report cognitive lapses in daily life. These lapses include forgetfulness, difficulty concentrating, and increased mental fatigue (Alfonsi et al., 2020). The literature highlights a potentially cyclical relationship: excessive social media use disrupts sleep, and poor sleep leads to cognitive inefficiency, which may further increase digital dependency as a form of coping or distraction. Young adults, who are already navigating academic, social, and emotional challenges, may be particularly vulnerable to this cycle. Overall, the existing body of research emphasizes the need to understand the broader consequences of digital behavior on mental and cognitive health. While social media offers clear benefits, its overuse may come at the cost of cognitive clarity and emotional balance, largely mediated by its interference with sleep.

Keywords: *Social media use, Sleep quality, Cognitive lapses, Young Adults, Psychological well-being*

In today's hyper-connected world, social networking isn't just a pastime—it's part of how young adults communicate, cope, and even construct identity. What began as platforms for social interaction have evolved into immersive environments that shape thoughts, behaviors, and even biology. Since the late 2000s, particularly around the rapid

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smartphone adoption post-2010, researchers began noticing a troubling link between increased digital activity and disruptions in basic psychological functioning (Demirci et al., 2017).

University students, in particular, stand at the crossroads of digital freedom and psychological vulnerability. With academic expectations, peer pressures, and emotional shifts all unfolding in real time, many turn to their devices for relief, distraction, or validation. But as screen time rises, so does the cost—especially when it comes to sleep. Studies from as early as 2011 began flagging the effects of digital overuse on sleep disturbances, showing that pre-sleep screen exposure affects both sleep onset and overall sleep quality (Buysse et al., 1989; Thomée et al., 2011).

Sleep, however, doesn't exist in isolation. It feeds into cognitive functions like attention, memory, and decision-making. The disruption of these processes—commonly reported in young adults who overuse social media—reflects a deeper loop: one where behavioral addiction drives poor rest, which then results in increased cognitive inefficiencies. This cycle aligns with broader theories of behavioral addiction, which emphasize compulsive use despite negative consequences (Griffiths, 2005).

As digital engagement becomes an everyday habit, it's crucial to understand not just the surface-level behaviors, but the psychological and cognitive patterns they influence. This isn't about demonizing technology—it's about recognizing its impact, especially when the mind is still growing, adapting, and deeply shaped by routine.

Understanding Social Networking Addiction through the Biopsychosocial Lens

The biopsychosocial model explains addiction as a complex interplay between biological, psychological, and social factors (Engel, 1977). This model is particularly useful in understanding behavioral addictions, such as social networking addiction, which lacks a clear physiological substance but displays compulsive use and harmful consequences similar to substance use disorders.

From a biological perspective, addictive behaviors can influence the brain's reward pathways, primarily the mesolimbic dopamine system. Frequent social media use may stimulate dopamine release, reinforcing the behavior and creating a feedback loop of compulsive checking and scrolling (Volkow et al., 2011).

Psychologically, individuals may turn to social networks as a coping mechanism for stress, anxiety, or low self-esteem. This aligns with evidence that shows increased use among individuals with higher tendencies for impulsivity and poor emotion regulation (Grant et al., 2010). Over time, this reliance can contribute to cognitive overload and mental fatigue, potentially leading to cognitive failures such as forgetfulness and attentional lapses.

Social factors also play a crucial role. Peer pressure, fear of missing out (FOMO), and social comparison are highly prevalent in online interactions and may perpetuate compulsive social media behavior. Moreover, the 24/7 accessibility of digital platforms blurs boundaries between personal and academic or work life, often encroaching on healthy sleep patterns (Kuss & Griffiths, 2015).

In the context of young adults, the biopsychosocial model highlights how their developmental stage—marked by identity exploration and social connectedness—makes

them particularly vulnerable to social networking addiction. This vulnerability can disrupt not only sleep quality but also cognitive functioning, potentially impairing academic performance and daily functioning.

REVIEW OF LITERATURE

The emergence of social networking addiction is closely tied to the explosive growth of digital technology in the early 21st century. What began as a tool for enhancing connectivity has gradually turned into a behavioral pattern marked by compulsion, dependency, and emotional regulation issues. By the mid-2000s, platforms like Facebook and Orkut became household names, especially among Indian youth, fostering a new digital culture (Kuss & Griffiths, 2011). As smartphones became more accessible around 2010, the intensity and frequency of usage surged, raising concerns about excessive online behavior and its psychological consequences. Social networking, once framed as a leisure activity, started showing signs of addiction—characterized by preoccupation, withdrawal symptoms, and neglect of offline responsibilities (Andreassen et al., 2012). The problem became particularly visible among young adults, whose developmental stage and social needs made them more susceptible to this form of digital overuse (ISCA, 2013).

In another study, problematic social media use has been linked to increased anxiety, depression, poor sleep, and emotional exhaustion. Users often struggle with low self-esteem and loneliness despite being digitally connected. The need for validation and fear of missing out further drive this cycle. These patterns reflect deeper psychological and physical disruptions (Keles et al., 2020).

Excessive engagement with social networking sites has been consistently associated with poor sleep outcomes and impaired cognitive functioning in young adults. Wolniczak et al. (2013) reported that high SNS usage correlates with shorter sleep duration and lower cognitive performance during the day. Similarly, Levenson et al. (2017) found that frequent social media use increases the risk of sleep disturbances due to heightened psychological arousal and delayed sleep onset. Moreover, Scott and Woods (2019) emphasized that digital media overuse may compromise executive functions like memory and attention, which are particularly vulnerable to sleep-related deficits. These findings underscore the growing concern around social media addiction as a contributor to both sleep disruption and cognitive failures in young populations.

Diekelmann and Born (2010) explore how different stages of sleep contribute uniquely to memory consolidation. Their review highlights that slow-wave sleep (SWS) supports declarative memory, such as learning facts or events, while REM sleep plays a key role in procedural memory, like skills and habits. These findings emphasize that quality sleep isn't just for rest—it actively shapes how we store and process information.

Alonzo et al. (2021) reviewed existing research and found that frequent social media use in youth is linked to poor sleep quality, which often contributes to mental health issues like anxiety and depression. Their findings suggest that digital habits can directly influence both rest and emotional well-being, highlighting the importance of mindful online behavior among young people.

Recent research has strengthened the understanding that excessive digital media use negatively affects both sleep quality and cognitive performance in young adults. Carter et al. (2022) found that increased screen time, particularly on mobile devices, was associated with

shorter sleep duration and poor sleep quality. Similarly, Levenson et al. (2016) showed that frequent social media users reported significantly higher levels of sleep disturbance. Poor sleep, in turn, has been linked to impaired attention and memory performance, as demonstrated by Benitez and Gunstad (2020). These findings suggest that not only does digital overuse disrupt rest, but it also undermines cognitive functioning, making digital hygiene a growing concern for young populations.

Recent studies have highlighted the complex relationship between social media use, sleep quality, and cognitive function in young adults. While existing research establishes a correlation between excessive social media engagement and sleep disturbances, gaps remain in understanding the underlying mechanisms and causal relationships. For instance, a study by Levenson et al. (2017) found a significant association between social media use and sleep disturbances among young adults, yet it did not clarify whether social media use causes poor sleep or if individuals with sleep issues are more inclined to use social media. Similarly, research by Scott and Woods (2019) indicated that fear of missing out (FOMO) mediates the relationship between social media use and sleep problems, suggesting psychological factors play a crucial role. However, the specific cognitive processes affected by disrupted sleep due to social media use are not well-defined. Addressing these gaps requires longitudinal studies to determine causality and experimental designs to explore the cognitive domains impacted by sleep disruption linked to social media use.

From what the research tells us, it's clear that social media has become deeply woven into the everyday lives of young adults, shaping how they connect, relax, and even sleep. But this constant connection comes at a cost. Studies show that excessive use of social networking sites—especially before bedtime—can seriously disrupt sleep. This happens partly because late-night screen time reduces melatonin, the hormone that helps us fall asleep (Diekelmann & Born, 2010). As sleep quality drops, people often feel more tired, less focused, and more forgetful the next day. It also seems that constantly switching between apps or multitasking online overloads the brain, making it harder to concentrate or process information properly (Benitez & Gunstad, 2020). Researchers like Davis (1999) help us understand this through models that explain how deeper issues like stress, anxiety, or low self-esteem can drive compulsive social media habits. And while social media was designed to bring people together, it's now clear that overuse can harm both mental clarity and emotional health. So, as helpful as these platforms are, the challenge is to use them mindfully—finding a balance that supports both sleep and cognitive well-being.

CONCLUSION

To sum up, the growing body of research strongly points to the fact that while social media has revolutionized the way young adults connect, communicate, and access information, its excessive use comes with serious consequences for both sleep and cognitive functioning. What starts as casual scrolling often turns into a compulsive habit that disrupts natural sleep cycles—mostly because of late-night screen exposure and constant mental stimulation, both of which interfere with melatonin production and the brain's ability to wind down (Diekelmann & Born, 2010). Poor sleep, in turn, doesn't just leave people feeling groggy—it actively reduces their ability to focus, remember things, and make sound decisions (Benitez & Gunstad, 2020). The problem is more than just physical fatigue; it's about mental clarity, emotional regulation, and productivity in day-to-day life. Moreover, Davis's (1999) cognitive-behavioral model gives us a clearer picture of how internal struggles like low self-esteem or anxiety can lead individuals to rely on social media for validation or distraction, reinforcing a cycle of overuse. This cycle often leads to cognitive overload,

media multitasking, and psychological distress (Alonzo et al., 2021). What becomes evident is that sleep issues and cognitive failures are not isolated outcomes—they're deeply interlinked and largely influenced by digital behavior patterns. Therefore, this growing dependency on social media calls for mindful use, better awareness, and further research, especially in young adults, who are most vulnerable to its effects. Understanding this relationship is not only important for mental well-being but also for promoting healthier, more sustainable online habits.

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Conflict of Interest

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