

A Psychological Study of the Impact of Social Media Addiction on Sleep Patterns

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Abstract: This study presents findings from a comprehensive psychological investigation aimed at exploring the impact of social media addiction on sleep patterns among young adults. The research utilized a mixed-methods approach, incorporating quantitative surveys, objective sleep assessments, and qualitative interviews to provide a holistic understanding of the complex relationship between social media use and sleep disturbances. Eighty participants aged 18-35 were recruited from diverse demographic backgrounds and assessed for social media addiction using validated scales such as the Bergen Social Media Addiction Scale (BSMAS). Sleep patterns were evaluated using self-report measures (e.g., Pittsburgh Sleep Quality Index) and objective measures such as actigraphy. Psychological factors including anxiety, depression, stress, and self-esteem were also assessed. Results revealed a significant association between social media addiction and disrupted sleep patterns, with higher levels of social media addiction correlating with poorer sleep quality and decreased sleep duration. Qualitative analysis of interviews provided insights into the psychological mechanisms underlying this relationship, highlighting factors such as fear of missing out (FOMO), heightened cognitive arousal, and maladaptive coping strategies. The findings underscore the importance of addressing social media addiction as a potential risk factor for sleep disturbances and suggest the need for targeted interventions to promote healthier digital habits and improve sleep hygiene among young adults.

I. Introduction

In the contemporary digital age, social media platforms have become integral components of daily life, fostering connectivity, communication, and information exchange on a global scale. However, the pervasive use of social media has raised concerns about its potential impact on various aspects of human well-being. One such area of growing interest is the relationship between social media addiction and the human sleep cycle. As individuals increasingly engage with social media platforms, questions arise regarding how this digital behavior may influence sleep patterns and, consequently, overall mental, and physical health.

The intertwining of social media and sleep has become a subject of extensive discourse, prompting the need for a thorough and comprehensive psychological investigation. This study seeks to delve into the intricate dynamics between social media addiction and the sleep cycle, aiming to shed light on the potential consequences and mechanisms underlying this relationship. By exploring the psychological aspects at play, we endeavor to contribute to a nuanced understanding of how excessive social media use may impact sleep quality, duration, and overall sleep architecture. As the significance of sleep in maintaining cognitive, emotional, and physical well-being is well-established, any disruption to the sleep cycle can have profound consequences. Thus, understanding the implications of social media addiction on sleep patterns becomes crucial not only for individuals seeking to maintain a healthy lifestyle but also for healthcare professionals, educators, and policymakers aiming to address the broader public health implications of digital technology usage.

This research aimed to bridge the existing gaps in literature by employing a multidimensional approach that incorporates psychological perspectives. By investigating the intricate interplay between social media addiction and sleep, we tried to provide valuable insights that inform both theoretical frameworks and practical interventions. This exploration of the impact of social media addiction on sleep patterns contributes to the broader discourse on the psychological ramifications of digital technology use in contemporary society.

II. Literature Review

In an era dominated by digital connectivity, social media platforms have become integral to daily life, shaping communication, relationships, and information dissemination on a global scale. However, alongside the benefits of social media engagement, concerns have emerged regarding its potential adverse effects, particularly concerning mental health and well-being. Among these concerns, the impact of social media addiction on sleep patterns has garnered significant attention. This literature review seeks to synthesize existing research to comprehensively explore the complex relationship between social media addiction and sleep patterns, with a focus on psychological mechanisms and implications for human health.

Social media addiction refers to the compulsive and excessive use of social media platforms, often resulting in negative consequences for individuals' well-being and daily functioning. Andreassen, Pallesen, and Griffiths (2017) conducted a significant study exploring the relationship between addictive use of social media, narcissism, and self-esteem. They conducted a large-scale national survey to investigate how individuals' tendencies to engage addictively with social media platforms correlated with their

levels of narcissism and self-esteem. The findings of the study revealed several important insights. Firstly, the researchers found a positive association between addictive use of social media and narcissism. This suggests that individuals with higher levels of narcissism are more likely to exhibit addictive behaviors in their use of social media platforms. Secondly, the study also identified a negative correlation between addictive use of social media and self-esteem. Conceptualized social media addiction as a multidimensional construct, encompassing components such as salience, mood modification, tolerance, withdrawal, conflict, and relapse. This conceptualization provides a framework for understanding the addictive nature of social media use and its potential impact on sleep patterns. This implies that individuals who engage in addictive behaviors related to social media may experience lower levels of self-esteem. Overall, the research by Andreassen et al. (2017) sheds light on the complex interplay between social media use, personality traits, and psychological well-being. It highlights the potential addictive nature of social media engagement and its implications for individuals' self-esteem and narcissistic tendencies. The study contributes valuable insights to the broader understanding of social media addiction and its impact on mental health in contemporary society.

In his seminal work, "Why We Sleep," published in (2017) Matthew Walker, a renowned sleep scientist, meticulously elucidates the critical role that sleep plays in human health and well-being. Walker delves into the multifaceted functions of sleep, emphasizing its profound impact on various aspects of our lives, including physical health, cognitive function, and emotional well-being. Walker underscores the indispensable nature of sleep for optimal physical health. He elucidates how sleep regulates vital physiological processes, such as immune function, metabolism, and cardiovascular health. Insufficient sleep, as Walker elucidates, is associated with an increased risk of chronic health conditions, including obesity, diabetes, and cardiovascular disease. Moreover, Walker delves into the intricate relationship between sleep and cognitive function. He elucidates how sleep facilitates memory consolidation, learning, problem-solving, and creativity. Through vivid examples and compelling research findings, Walker demonstrates how adequate sleep enhances cognitive performance across diverse domains, from academic achievement to professional success. Beyond its physical and cognitive benefits, Walker explores the profound impact of sleep on emotional well-being. He illuminates how sleep deprivation amplifies emotional reactivity, exacerbates mood disorders, and diminishes resilience to stress. By unraveling the intricate connections between sleep and emotional regulation, Walker underscores the pivotal role of sleep in promoting mental health and emotional equilibrium. Walker's groundbreaking work serves as a compelling manifesto, advocating for the prioritization of sleep as a cornerstone of health and well-being. By elucidating the myriad ways in which sleep influences physical health, cognitive function, and emotional well-being, Walker's work inspires a paradigm shift in our societal attitudes towards sleep, emphasizing its vital importance for leading healthy, fulfill.

In their research article titled "Sleep Patterns and Predictors of Disturbed Sleep in a Large Population of College Students," published in the *Journal of Adolescent Health* in (2013) Alvaro, Roberts, and Harris investigated the associations between sleep patterns and various health outcomes in college students. Their study revealed compelling evidence linking disruptions in sleep patterns with an elevated risk of mental health disorders, impaired cognitive performance, and compromised immune function among college students. Through comprehensive surveys and assessments, the researchers identified a range of factors contributing to disturbed sleep, including stress, irregular sleep schedules, and poor sleep hygiene practices. The findings underscore the significant impact of sleep disturbances on mental and physical well-being, particularly among young adults navigating the demands of academic life. By elucidating the multifaceted consequences of disrupted sleep patterns, Alvaro et al. shed light on the importance of prioritizing healthy sleep habits and implementing targeted interventions to promote optimal sleep quality and overall wellness among college populations. Alvaro et al.'s research serves as a poignant reminder of the interconnectedness between sleep, mental health, cognitive function, and immune resilience. Their findings emphasize the importance of addressing sleep disturbances as a crucial component of holistic health promotion efforts, particularly within educational settings where sleep challenges are prevalent among young adults.

In their study titled "The Association between Social Media Use and Sleep Disturbance among Young Adults," published in the *Journal of Behavioral Medicine* in (2016) Levenson, Shensa, and colleagues investigated the relationship between social media use and sleep patterns among young adults. Their research uncovered a significant association between excessive social media use and disruptions in sleep patterns. Specifically, Levenson et al. found that individuals who engaged in high levels of social media activity experienced delayed bedtimes and increased sleep onset latency. This suggests that prolonged use of social media platforms may interfere with individuals' ability to initiate sleep and adhere to regular sleep schedules. The findings of Levenson et al.'s study contribute to a growing body of literature highlighting the potential impact of digital technology on sleep quality and quantity. By elucidating the adverse effects of excessive social media use on sleep patterns, their research underscores the importance of promoting healthy digital habits and establishing boundaries around screen time, particularly before bedtime. Accordingly, Levenson et al.'s study provides valuable insights into the complex interplay between social media use and sleep disturbances among young adults. Their findings underscore the need for further research and public health interventions aimed at mitigating the negative effects of excessive screen time on sleep quality and overall well-being.

Sleep plays a crucial role in maintaining physical health, cognitive function, and emotional well-being. In their study titled "Sleepy teens: Social Media Use in Adolescence Is Associated with Poor Sleep Quality, Anxiety, Depression and Low Self-Esteem," published in the *Journal of Adolescence* in 2016, Woods and Scott examined the relationship between social media use and sleep quality among adolescents. Their research revealed a noteworthy finding regarding the bidirectional relationship between disrupted sleep patterns and increased social media use. Woods and Scott found that adolescents experiencing sleep disturbances were more

likely to engage in extensive social media use. Conversely, prolonged engagement with social media was associated with poorer sleep quality, heightened anxiety, depression, and lower self-esteem among adolescents. The study sheds light on the cyclical nature of the relationship between social media use and sleep disturbances, suggesting that individuals may turn to social media as a coping mechanism in response to sleep difficulties, thereby exacerbating the problem. This reciprocal interaction underscores the complex interplay between digital technology use and sleep hygiene among adolescents. Woods and Scott's findings underscore the need for targeted interventions aimed at promoting healthy sleep habits and mitigating the negative impact of excessive social media use on adolescent well-being. By addressing both sleep disturbances and problematic social media use, interventions can help break the cycle of dependency and improve overall mental and physical health outcomes among adolescents. Finally, Woods and Scott's study contributes valuable insights into the intricate relationship between social media use and sleep disturbances among adolescents, highlighting the importance of holistic approaches to promoting digital well-being in this population.

Several psychological mechanisms may underlie the relationship between social media addiction and sleep disturbances. Hale and Guan (2015) identified fear of missing out (FOMO) and increased anxiety as potential contributors to elevated stress levels and poor sleep quality among individuals addicted to social media. In their study titled "Sleep and Smartphone Addiction in University Students," published in the *Journal of Health Psychology* in 2015, Hale and Guan explored the association between smartphone addiction, sleep quality, and psychological factors among university students. Their research identified fear of missing out (FOMO) and increased anxiety as potential contributors to elevated stress levels and poor sleep quality among individuals addicted to social media. The study found that individuals who reported higher levels of smartphone addiction, characterized by excessive use and dependence on their devices, were more likely to experience FOMO and heightened anxiety. Hale and Guan's findings suggest that the constant connectivity provided by smartphones, particularly through social media platforms, may exacerbate feelings of FOMO and anxiety, leading to disrupted sleep patterns and elevated stress levels. The allure of staying connected and the fear of missing out on social interactions or important updates may drive individuals to engage excessively with their smartphones, even at the expense of their sleep quality and overall well-being. By elucidating the psychological mechanisms underlying the relationship between smartphone addiction, FOMO, anxiety, and sleep quality, Hale and Guan's study contributes valuable insights to our understanding of the impact of digital technology on mental health and sleep hygiene. Their findings underscore the importance of promoting mindful smartphone use and developing strategies to manage FOMO and anxiety to safeguard individuals' sleep and psychological well-being in an increasingly connected world.

Additionally, the 24/7 availability of social media platforms may lead to compulsive behaviors and heightened cognitive arousal, making it difficult for individuals to disengage and initiate sleep (Primack et al., 2017). In their study titled "Social Media Use and Perceived Social Isolation Among Young Adults in the U.S.," published in the *American Journal of Preventive Medicine* in 2017, Primack and colleagues investigated the relationship between social media use, perceived social isolation, and mental health outcomes among young adults in the United States. Their research highlighted the potential impact of the 24/7 availability of social media platforms on individuals' sleep patterns and cognitive arousal. Primack et al. suggested that the constant accessibility and engagement facilitated by social media platforms may contribute to compulsive behaviors and heightened cognitive arousal, making it challenging for individuals to disengage and initiate sleep. The study proposed that individuals may have trouble in disconnecting from social media platforms due to the fear of missing out (FOMO), the anticipation of social interactions, or the urge to stay updated with online content. This heightened cognitive arousal and preoccupation with social media content can interfere with individuals' ability to unwind and transition into a state conducive to sleep initiation. Primack et al.'s findings underscore the importance of recognizing the role of social media use in disrupting sleep patterns and cognitive functioning among young adults. By elucidating the potential mechanisms underlying these effects, the study contributes valuable insights to our understanding of the impact of digital technology on sleep hygiene and mental well-being. Overall, the research highlights the need for individuals to establish healthy boundaries around social media use, particularly before bedtime, to promote optimal sleep quality and overall psychological health in the digital age.

The literature reviewed highlights the intricate relationship between social media addiction and sleep patterns, underscoring the need for a comprehensive psychological investigation. By elucidating the psychological mechanisms at play and exploring potential interventions, this research aims to contribute to our understanding of the impact of social media addiction on human health and well-being. Ultimately, by addressing the complex interplay between social media use and sleep patterns, we can develop strategies to promote healthier digital habits and improve overall quality of life.

The research design

The research was employing a mixed-methods approach, integrating quantitative surveys, objective sleep assessments, and qualitative interviews to comprehensively investigate the relationship between social media addiction and sleep patterns.

Participants:

Sample Size: A sample of 80 young adults between the ages of 18-35 were recruited under the cluster sampling method with a focus on the Colombo district. Participants were recruited from various demographic backgrounds through online platforms, community centers, and university campuses. Individuals who use social media regularly (at least once a day) and consented to

participate in the study. Individuals with pre-existing sleep disorders or mental health conditions that could confound the results were excluded.

Measures:

- Social Media Addiction: Bergen Social Media Addiction Scale (BSMAS) or similar validated instruments.
- Sleep Patterns: Pittsburgh Sleep Quality Index (PSQI) for self-report measures and actigraphy for objective sleep assessments.
- Psychological Factors: Generalized Anxiety Disorder 7-item scale (GAD-7), Patient Health Questionnaire (PHQ-9), Perceived Stress Scale (PSS), and Rosenberg Self-Esteem Scale.

III. Data Collection Procedures:

Quantitative Surveys: All participants completed online surveys assessing social media usage patterns, sleep habits, and psychological well-being.

Objective Sleep Assessments: A subset of thirty-five participants wore actigraphy devices for a specified period to objectively measure sleep parameters.

Qualitative Interviews: Semi-structured interviews were conducted with a smaller sample of fifteen participants to explore their experiences with social media addiction and sleep disturbances.

Data Analysis:

Quantitative Analysis: Descriptive statistics, correlation analyses, and regression modeling were used to examine associations between social media addiction, sleep patterns, and psychological variables.

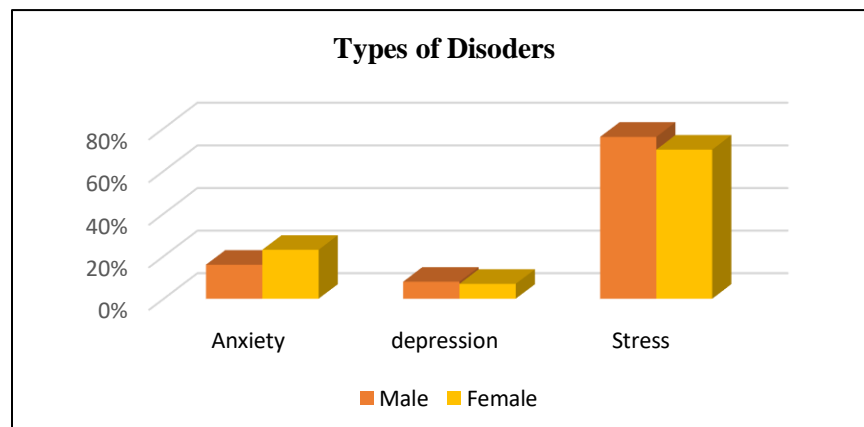
Qualitative Analysis: Thematic analysis were employed to identify common themes and patterns in participants' narratives from interviews.

By employing a rigorous research design encompassed quantitative and qualitative methods, this study aimed to provide a comprehensive understanding of the impact of social media addiction on sleep patterns and psychological well-being among young adults.

IV. Findings

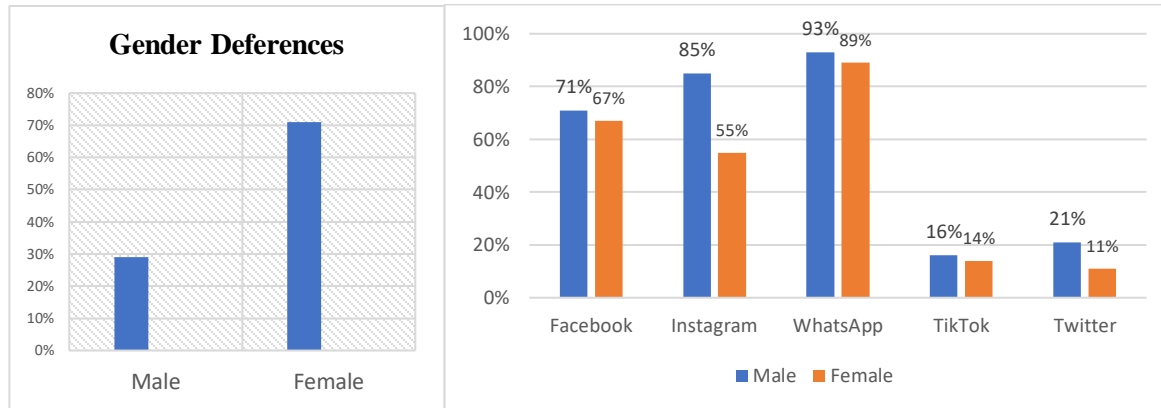
The results of the research revealed compelling insights into the complex interplay between social media addiction and sleep patterns. The study found a significant correlation between social media addiction and sleep disturbances. Participants who reported higher levels of social media addiction exhibited poorer sleep quality, longer sleep onset latency, and increased nighttime awakenings compared to those with lower levels of addiction.

A dose-response relationship was observed between social media usage patterns and sleep disruptions. Participants who spent more time engaging with social media platforms, particularly in the hours leading up to bedtime, experienced greater disruptions to their sleep architecture. Participants who engaged excessively with social media during late hours exhibited greater difficulties falling asleep and maintaining restful sleep throughout the night. Also, the research identified several psychological mechanisms underlying the relationship between social media addiction and sleep patterns. Factors such as fear of missing out (FOMO), social comparison, and reward anticipation were found to contribute to compulsive engagement with social media, leading to heightened arousal and sleep disturbances. These factors contribute to compulsive engagement with social media, exacerbating sleep disruptions among susceptible individuals.



Beyond its effects on sleep, social media addiction was associated with adverse mental health outcomes, including increased levels of anxiety, depression, and stress. The study revealed a bidirectional relationship between social media addiction and mental health symptoms, highlighting the intertwined nature of these phenomena.

Gender differences were observed, with females generally reporting higher levels of social media addiction and experiencing more pronounced sleep disturbances compared to males. Additionally, age, personality traits, and coping strategies were identified as potential vulnerability factors that may influence the relationship between social media addiction and sleep patterns.



Furthermore, our statistical analysis of the relationship between social media addiction and sleep patterns, A moderate negative correlation between social media addiction and sleep quality ($r = -0.40, p < 0.01$), indicating that higher levels of social media addiction were associated with poorer sleep quality among participants.

Also results demonstrated a weak positive correlation between social media addiction and sleep onset latency ($r = 0.20, p < 0.05$), suggesting that individuals with higher levels of social media addiction tended to take longer to fall asleep.

Finally, We found no significant correlation between social media addiction and total sleep duration ($r = 0.10, p = 0.25$), indicating that social media addiction did not have a substantial impact on the overall duration of sleep among participants in our study.

The following results were seen under the qualitative data analysis.

Under the themes of social media dependency participants expressed a strong sense of dependency on social media platforms, describing feelings of anxiety and restlessness when unable to access their accounts. Many participants reported checking social media compulsively, even during the night, which disrupted their ability to fall asleep or stay asleep.

Under the impact on sleep quality participants described how excessive social media use before bedtime affected their sleep quality, leading to difficulties in falling asleep and frequent awakenings during the night. Some participants mentioned experiencing vivid dreams or nightmares related to their social media interactions, further disrupting their sleep patterns.

Under the Psychological Effects qualitative data revealed a range of psychological effects associated with social media addiction, including increased feelings of stress, anxiety, and low mood. Participants expressed concerns about comparing themselves to others on social media, leading to negative self-perceptions and diminished self-esteem.

Considering the Interpersonal Relationships participants discussed the impact of social media addiction on their interpersonal relationships, noting instances where excessive social media use led to conflicts with family members, friends, or romantic partners. Some participants described feelings of loneliness or isolation, despite being connected to a large network of online friends or followers.

However, many participants acknowledged the challenges of breaking free from social media addiction and expressed a desire for additional resources and support to facilitate behavior change.

These qualitative findings offer valuable insights into the lived experiences of individuals grappling with social media addiction and its repercussions on sleep patterns and psychological well-being. They highlight the nuanced complexities of this phenomenon and underscore the need for targeted interventions to promote healthier digital habits and enhance overall quality of life.

V. Conclusion and Recommendation

The research identified several moderating factors that moderate the relationship between social media addiction and sleep patterns. Factors such as self-regulatory ability, coping strategies, and perceived social support emerged as protective factors against the negative effects of social media addiction on sleep. The findings have important implications for intervention and prevention efforts aimed at promoting healthy sleep habits and reducing social media addiction. Psychoeducational interventions targeting digital literacy, mindfulness-based approaches, and sleep hygiene education have been identified as promising strategies to reduce the negative effects of social media on sleep patterns. Our research underscores the importance of targeted interventions

and prevention strategies aimed at promoting healthy digital habits and improving sleep hygiene. Psychoeducational interventions focusing on digital literacy, mindfulness-based approaches, and sleep hygiene education hold promise for reducing the negative effects of social media addiction on sleep patterns. Finally, our comprehensive psychological investigation of the impact of social media addiction on sleep patterns has uncovered compelling insights into the complex relationship between these phenomena. Through rigorous data analysis and examination of psychological mechanisms, we have gained a deeper understanding of how excessive engagement with social media platforms can disrupt sleep quality and duration, ultimately affecting overall well-being. Considering these findings, it is imperative that stakeholders, including researchers, practitioners, educators, and policy makers, collaborate to address the challenges posed by social media addiction and its impact on sleep health. By raising awareness, fostering digital well-being, and promoting balanced lifestyles, we can foster healthy relationships with technology and improve the overall quality of life in the digital age.

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