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Social Media Usage and Attention Span as a Predictor of Sleep Quality Among Young Adults

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Abstract

Social media usage has become increasingly pervasive, raising concerns about its potential effects on cognitive processes, such as attention, and physical outcomes, such as sleep quality. This study aims to investigate if social media usage, mindful attention awareness predict sleep quality among individuals. A cross-sectional correlational design involving 152 participants recruited through purposive sampling. Participants completed three measures: the Social Media Use Scale (SMUS) to assess social media usage patterns, the Mindful Attention Awareness Scale (MAAS) to evaluate levels of mindfulness, and the Jenkins sleep evaluation questionnaire to assess sleep quality. Pearson's correlation analysis and Multiple regression analysis was conducted to explore the associations between social media usage, mindfulness, and sleep quality. It is hypothesized that higher levels of social media usage will be negatively correlated with mindfulness and sleep quality, with excessive usage, particularly in the evening, likely contributing to poorer outcomes. It is hypothesized that higher levels of social media usage will be negatively correlated with mindfulness and sleep quality, with excessive usage, particularly in the evening, likely contributing to poorer outcomes. The results revealed a significant negative relationship between mindfulness and sleep disturbances, indicating that individuals with higher mindfulness experienced better sleep quality. However, no significant correlation was found between social media usage and either mindfulness or sleep quality. Due to non-normality of the data, multiple regression analysis was not conducted. The findings provide insights into the complex relationship between social media behaviors, mindfulness, and sleep health, offering potential strategies for mitigating the adverse effects of social media use and improving overall well-being.

Keywords: Social media usage, Mindfulness, Sleep quality, Social media usage, Mindfulness attention awareness scale, Jenkins sleep evaluation questionnaire.

Introduction

Background and Context

In an increasingly digital world, social media has become an integral part of daily life for young people, particularly those in the developmental stages of emerging and early adulthood. These platforms, while enabling greater connectivity, self-expression, and information access, have also been implicated in a range of cognitive and behavioral concerns. Notably, growing empirical evidence points to a troubling link between excessive social media usage and disruptions in attention span and sleep quality (Levenson et al., 2016; Boer et al., 2020; Hjetland et al., 2021). These disruptions are not merely superficial; they



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affect young people's ability to sustain focus, engage meaningfully in academic and professional tasks, and maintain emotional regulation all of which are critical for well-being and long-term success.

Social media platforms are designed to be immersive and attention-capturing, often leveraging algorithms that reward rapid consumption and instant gratification. This design fosters a culture of multitasking, fragmented thinking, and habitual checking behaviors, all of which negatively affect the brain's executive functions (Bermúdez, 2016; Andreassen & Pallesen, 2014). Prolonged engagement with short-form content such as Instagram Reels, YouTube Shorts, and TikTok videos has been found to impair sustained attention and increase susceptibility to distraction (Asif & Kazi, 2022; Kohler, 2023). Furthermore, the blue light emitted by screens, particularly during late hours, disrupts circadian rhythms and melatonin production, contributing to delayed sleep onset, poor sleep quality, and sleep-related fatigue (Levenson et al., 2016; Hjetland et al., 2021). These cognitive and physiological disruptions can, over time, lead to cumulative stress, impaired academic performance, and elevated levels of anxiety and depression (Kross et al., 2013; Shahzad et al., 2024).

These concerns are especially urgent in the Indian context, where over 600 million individuals are under the age of 25 (UNICEF, 2021). Indian youth are among the world's most digitally connected populations, with a sharp rise in smartphone ownership and internet accessibility even in semi-urban and rural areas (Smith & Anderson, 2018). While this digital penetration presents unique opportunities, it also introduces psychosocial vulnerabilities. The academic and mental health landscape in India reflects growing levels of distress among youth, with increasing reports of sleep disturbances, anxiety disorders, and attentionrelated difficulties (Sharma & Awasthi, 2018; Basu et al., 2021). However, most existing studies on social media usage, attention, and sleep quality have been conducted in Western contexts, and often focus on highly specific subgroups such as clinical populations or students diagnosed with internet addiction (Kuss & Griffiths, 2017; Hawi & Samaha, 2016). There is a significant gap in literature that examines the broader, non-addictive use of social media and its impact on cognitive and emotional functioning within the general population of Indian youth.

In this light, understanding the influence of social media use on attention and sleep is not just a matter of academic interest; it has substantial implications for public health, education, and youth development policy. India's National Education Policy (NEP 2020) and National Mental Health Programme (NMHP) both underscore the importance of promoting holistic development, emotional well-being, and digital literacy. However, to create interventions that are both effective and culturally relevant, there is a need for evidence-based research that accounts for the lived experiences of Indian youth and the sociocultural dynamics that shape their digital behaviors.

In parallel, there is growing recognition of the value of a strengths-based approach to youth development. The VIA (Values in Action) Classification of Character Strengths and Virtues, developed by Peterson and Seligman (2004), offers a useful framework for identifying and cultivating psychological strengths such as self-awareness, perseverance, and emotional intelligence. These strengths not only contribute to flourishing but may also act as buffers against the negative effects of excessive social media use (Ryan & Deci, 2001; Park et al., 2009). Unfortunately, the pervasive culture of comparison and performative validation fostered by social media often shifts users' focus away from these internal assets, thereby undermining self-concept clarity and increasing vulnerability to distraction and psychological distress (Kross et al., 2013; Huang, 2017).

Emerging research has shown that youth who exhibit higher levels of self-awareness and mindfulness tend to use digital technologies more intentionally and are less affected by the detrimental aspects of constant



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connectivity (Lara & Bokoch, 2021). This suggests that cultivating personal strengths may not only mitigate the cognitive and emotional impacts of social media overuse but also foster healthier digital habits and a more grounded sense of self. However, such strengths are rarely emphasized in mainstream mental health interventions in India, which often lack alignment with cultural values, social norms, and the lived realities of Indian youth (Rao et al., 2019).

Taken together, these insights highlight the need for a more comprehensive understanding of how social media use intersects with attention span, sleep quality, and psychological strengths among Indian youth. The issue is no longer confined to problematic users or digital addicts; it is a widespread concern that affects even those engaging with social media at moderate levels. As such, the present study seeks to investigate the relationship between social media usage, attention span, and sleep quality among emerging and early adults in India, while also exploring the potential moderating role of character strengths and self-awareness. By grounding this research in the Indian context and integrating both cognitive and positive psychological perspectives, the study aims to inform the development of culturally responsive interventions that promote flourishing in the digital age.

The present study aims to investigate the relationship between social media usage, attention span, and sleep quality among emerging and early adults in the Indian context. Furthermore, the study seeks to explore the moderating influence of self-awareness and character strengths drawn from the VIA framework on this relationship. By adopting a culturally attuned and empirically grounded approach, the study endeavors to contribute to the growing literature on youth mental health and digital well-being, and to inform the development of targeted interventions that promote flourishing in the digital age.

Introduction to Variables

This study explores the relationships between social media usage, mindful attention awareness, and sleep quality. Each variable is discussed in detail below, outlining its relevance, conceptual background, and role in the current research.

1. Social Media Usage

Social media usage refers to the frequency, intensity, and behavioral patterns associated with individuals' engagement on platforms such as Instagram, Facebook, and TikTok. With the rise of smartphones and internet accessibility, social media has become an integral part of everyday life. However, excessive and unregulated use especially during late-night hours has been associated with several adverse outcomes, including impaired attention, emotional dysregulation, and disrupted sleep patterns (Andreassen & Pallesen, 2014; Levenson et al., 2016; Hjetland et al., 2021).

In this study, social media usage is treated as an independent variable (predictor). It is operationalized using the Social Media Use Scale (SMUS), which captures dimensions such as frequency of use, time spent on platforms, and problematic use behaviors (e.g., compulsive checking or late-night scrolling). The study specifically examines whether increased social media use is associated with poorer sleep quality and lower mindfulness levels.

2. Mindful Attention Awareness

Mindful attention awareness, or dispositional mindfulness, refers to an individual's capacity to attend to present-moment experiences with openness, curiosity, and non-judgment (Brown & Ryan, 2003). High levels of mindfulness are associated with improved emotion regulation, cognitive flexibility, and reduced impulsivity. Crucially, mindfulness is also linked to better sleep quality and reduced digital overuse (Park et al., 2009; Bermúdez, 2016; Boer et al., 2020).



In this study, mindful attention awareness is conceptualized as both a predictor and a potential mediator, providing insight into whether it buffers the negative effects of social media on sleep. It is measured using the Mindful Attention Awareness Scale (MAAS), which assesses the extent to which individuals maintain awareness of and attention to their present experiences. Understanding the role of mindfulness can contribute to developing self-regulation strategies to reduce social media-induced cognitive and behavioral issues.

3. Sleep Quality

Sleep quality is a multidimensional construct encompassing aspects such as sleep duration, latency (time taken to fall asleep), efficiency, disturbances, and overall restfulness. Poor sleep quality is increasingly prevalent among individuals with high levels of screen time and social media engagement, due to factors such as blue light exposure, cognitive stimulation, and disrupted circadian rhythms (Aldhawyan et al., 2020; Basu et al., 2021).

In the current study, sleep quality is the dependent variable (outcome), assessed using the Jenkins Sleep Evaluation Questionnaire. This self-report measure captures subjective sleep experiences over a recent time period. The study aims to determine whether excessive social media use and lower mindfulness levels are associated with greater sleep disturbances and poorer overall sleep outcomes.

By exploring these three variables together, the research seeks to clarify the pathways through which digital behaviors and cognitive processes influence physical and psychological health. The findings may inform targeted interventions for improving sleep hygiene and mental well-being in the digital age.

Clinical Background of Variables

In recent years, growing attention has been paid to the psychological and clinical implications of social media use, mindfulness, and sleep quality, three variables that are increasingly interlinked in the lives of young adults. Social media has become an integral part of daily routines, but its excessive or compulsive use has raised concerns among clinicians and researchers alike. Although not yet officially recognized as a disorder in the DSM-5, problematic social media use shares many features with behavioral addictions, such as impulsivity, poor self-regulation, and interference with daily functioning (Andreassen & Pallesen, 2014). From a clinical perspective, individuals who spend excessive time on platforms like Instagram or TikTok often present with issues such as anxiety, reduced attention span, emotional dysregulation, and disrupted sleep symptoms that are frequently addressed in therapy, particularly through cognitive-behavioral approaches focused on managing screen time and improving emotional control (Levenson et al., 2016; Husain et al., 2024).

Mindful attention awareness, on the other hand, has emerged as a protective factor in this digital age. Defined as the ability to stay present and attentive to current experiences in a non-judgmental way, mindfulness is a central component of several evidence-based interventions, including Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT). Clinically, lower levels of mindfulness are associated with increased susceptibility to distraction, emotional reactivity, and rumination factors that can exacerbate mental health issues, especially in environments saturated with digital stimuli (Brown & Ryan, 2003; Lara & Bokoch, 2021). Enhancing mindfulness has shown positive effects in reducing the psychological toll of constant connectivity and promoting healthier habits, including better emotional regulation and reduced screen dependency.

Sleep quality remains another key clinical concern, often viewed as both a symptom and a contributing factor in various psychological conditions. Poor sleep is closely linked to disorders such as depression,



anxiety, and attention-deficit/hyperactivity disorder (ADHD), and it is commonly one of the first indicators of psychological distress in young adults. With the rise of nighttime social media use, researchers have increasingly noted the role of screens in disturbing circadian rhythms, delaying melatonin production, and increasing cognitive arousal all of which contribute to diminished sleep quality (Aldhawyan et al., 2020; Hjetland et al., 2021). Clinicians now frequently include sleep hygiene education and digital detox strategies as part of therapeutic interventions to help clients improve both mental health and sleep outcomes.

Taken together, these variables illustrate a complex but clinically important interplay. While social media overuse can negatively affect both attentional capacity and sleep, mindfulness may serve as a buffering factor helping individuals manage digital engagement more effectively and maintain psychological balance. Understanding these relationships is crucial not only for advancing research but also for informing practical interventions that support mental health in a rapidly digitizing world.

Significance of the Study

The present study holds substantial significance as it contributes to the growing corpus of empirical research examining the psychological and behavioral impacts of social media, particularly within the underexplored context of Indian youth. While a considerable body of literature has investigated the adverse consequences of excessive social media usage including its effects on attention span, sleep quality, and mental health most studies to date have focused on niche populations such as individuals diagnosed with social media addiction or student samples from Western societies (Kuss & Griffiths, 2017; Andreassen et al., 2017; Junco, 2012). This limited scope has resulted in a gap in understanding how social media affects the broader, general youth population, particularly in culturally diverse and rapidly digitizing countries like India.

India's demographic reality further accentuates the relevance of this research. With over 600 million individuals under the age of 25, India possesses one of the largest youth populations in the world (UNICEF, 2019). This demographic not only represents the future workforce but also the primary users of digital technologies and social media platforms. Consequently, the cognitive and emotional well-being of Indian youth is a national priority. Disruptions in attention span and sleep quality have been shown to negatively influence academic achievement, emotional regulation, and overall psychological resilience (Levenson et al., 2016; Owens et al., 2017). Understanding these disruptions in the context of social media usage is vital for crafting effective interventions that address both digital behavior and mental health.

This research also seeks to bridge the gap between global theoretical frameworks and local realities by incorporating culturally grounded insights into digital behavior. The findings have the potential to inform the development of culturally sensitive and contextually appropriate interventions such as digital literacy curricula, school-based mindfulness programs, and community-level educational initiatives. Such interventions can promote healthier digital habits and mitigate the cognitive and emotional risks associated with high social media exposure (Scott, 2024; Huang, 2017). Additionally, the incorporation of strengths-based approaches—such as those derived from the VIA Character Strengths Framework can empower youth to cultivate self-awareness, self-regulation, and personal agency, thereby enhancing overall well-being and resilience (Peterson & Seligman, 2004; Park et al., 2009).

Furthermore, the study's implications extend beyond the individual to families, educators, mental health professionals, and policy-makers. By generating empirical evidence on the relationship between social media engagement, attention, and sleep in Indian youth, this research can support the development of



public health strategies aligned with India's National Mental Health Programme and New Education Policy (Ministry of Health and Family Welfare, 2020; Ministry of Education, 2020). Such policy frameworks increasingly emphasize the integration of psychosocial well-being into educational and developmental agendas.

In summary, this study not only addresses a critical research gap but also provides actionable insights that are essential for improving academic performance, psychological well-being, and societal productivity. Through its culturally attuned and empirically grounded approach, it offers a valuable contribution to the discourse on digital well-being and mental health in the Indian context.

Problem Statement

In recent years, the pervasive use of social media has emerged as a significant influence on the cognitive and behavioral patterns of young adults. Particularly within the Indian context, where the digital landscape is rapidly expanding and youth constitute a major portion of the population, concerns regarding the psychological and physiological effects of excessive social media use are becoming increasingly urgent. This study seeks to examine the relationship between social media engagement, attention span, and sleep quality among young adults in India, with a focus on how digital interactions may compromise cognitive performance and physical well-being.

Empirical research has consistently demonstrated that high levels of social media engagement are associated with reduced attention spans, increased distractibility, and fragmented cognitive functioning (Wilmer, Sherman, & Chein, 2017; Junco, 2012). Constant exposure to rapidly updating content and the compulsive nature of digital platforms may condition users toward hyperstimulation and attentional deficits, impairing their ability to concentrate on sustained academic tasks or engage in deep learning (Rosen, Lim, Carrier, & Cheever, 2011). Furthermore, the prevalence of nighttime screen use and social media scrolling has been linked to delayed sleep onset, shorter sleep duration, and poorer sleep quality (Levenson, Shensa, Sidani, Colditz, & Primack, 2016). These physiological disruptions, in turn, can exacerbate mental health challenges such as anxiety, stress, and depressive symptoms (Kross et al., 2013; Andreassen & Pallesen, 2014).

While much of the existing literature originates from Western contexts and often focuses on individuals with diagnosed social media addiction or university students, there remains a dearth of research exploring how general patterns of digital behavior impact broader youth populations in non-Western societies (Hawi & Samaha, 2016; Kuss & Griffiths, 2017). In India, where socio-cultural pressures, educational competitiveness, and infrastructural disparities uniquely shape young people's experiences, it is imperative to contextualize digital behaviors and their consequences. The complex interplay between technological dependence, mental health, academic demands, and family expectations may uniquely affect Indian youth, necessitating culturally informed inquiry (Rao et al., 2019).

Given India's rapidly growing internet user base where over 60% of users are under the age of 25 (IAMAI, 2023) the need for nuanced research into how digital habits influence core aspects of well-being is especially urgent. Academic underperformance and mental health deterioration among youth have been widely reported, with poor sleep and attention difficulties being key contributing factors (Sharma et al., 2018; Owens et al., 2017). The present study aims to fill this gap by investigating the correlations between social media usage, attention span, and sleep quality among Indian emerging and early adults.

In doing so, this research seeks to generate critical insights that can inform the development of targeted and culturally relevant interventions. These may include educational programs promoting digital literacy,



mindfulness-based strategies, and policy initiatives that encourage healthier social media engagement. By focusing on the Indian youth population, this study aspires to contribute to broader efforts aimed at enhancing mental health, academic performance, and overall well-being in the digital era.

Review of literature

This study by Andreassen and Pallesen (2014) provided a comprehensive review of social network site addiction and its cognitive implications, identifying how compulsive social media behaviors mirror the neurobiological mechanisms of other behavioral addictions. Their synthesis highlighted that individuals who scored high on measures of social media addiction often experienced deficits in executive functioning, such as sustained attention, impulse control, and cognitive flexibility. The study emphasized how constant digital stimulation led to attentional fragmentation, contributing to academic underperformance and diminished task persistence. The authors called for interventions to enhance digital literacy and self-regulation to mitigate attention-related challenges resulting from excessive social networking.

This study by Levenson et al. (2016) examined the direct relationship between social media usage patterns and sleep disturbance among young adults using a large cross-sectional sample. They found that higher frequency and emotional involvement with social media, especially near bedtime, were significantly associated with poorer sleep quality, delayed sleep onset, and increased daytime dysfunction. This study underscored how social media's stimulating content and screen exposure disrupted circadian rhythms by affecting melatonin production, contributing to chronic sleep deprivation among young users. These findings pointed toward the need for better digital hygiene practices and awareness campaigns targeting bedtime screen use.

This study by Aldhawyan et al. (2020) focused on freshman college students and revealed that subjective poor sleep quality was heavily influenced by frequent nighttime social media usage. The researchers found a significant correlation between social media-induced sleep disruption and academic exhaustion, suggesting that students who used social media intensively before bed had higher levels of sleep latency, sleep fragmentation, and reduced total sleep duration. Importantly, the study added to the evidence base by considering cultural and developmental factors within the college transition period, calling for campus-level interventions on technology use and sleep management.

This study by Kohler (2023) explored the effects of short-form video consumption, such as TikTok and Instagram Reels, on users' perceived attention span and emotional well-being. Findings suggested that repeated exposure to rapidly shifting content conditioned users to crave novelty, resulting in reduced tolerance for slower-paced cognitive tasks such as reading or studying. The addictive loop created by algorithmic engagement mechanisms significantly undermined the ability to concentrate for extended periods. The study illuminated how these platforms manipulated attention and mood through variable reward schedules, raising concerns about long-term cognitive implications.

This study by Husain et al. (2024) investigated the link between social media addiction, attention span, and aggression among university students. Using standardized tools, they found that students with higher social media addiction scores demonstrated not only a reduced capacity to focus but also increased levels of irritability and aggression, particularly when prevented from accessing their devices. This study provided a psychosocial lens to understand how cognitive overload and constant connectivity contributed to emotional dysregulation, suggesting that digital dependency has both cognitive and behavioral consequences.



This study by Shahzad, Hanif, and Haroon (2024) comprehensively analyzed the multifaceted impact of social media addiction on self-esteem, attention span, and sleep quality. Their findings revealed that excessive use disrupted sleep architecture and emotional regulation, leading to daytime fatigue and reduced attentional capacity. They also noted the role of negative social comparison and cyber validation in deteriorating users' self-perception. These interconnected outcomes formed a detrimental cycle where sleep disturbance exacerbated poor attention, which in turn led to increased reliance on digital platforms for distraction and affirmation.

This study by Junco (2012) analyzed the relationship between Facebook usage frequency and student engagement in academic environments. It found a negative correlation between the time spent on Facebook and students' participation in academic activities, indicating that excessive engagement in online interactions hindered in-class attention and academic motivation. This study contributed to the growing evidence that passive forms of social media usage, such as browsing feeds and consuming entertainment content, detracted from cognitive effort and real-world productivity among emerging adults. This study by Hjetland et al. (2021) examined self-reported screen time, social media addiction, and sleep among Norwegian university students. The study highlighted that students who exhibited signs of social media addiction had significantly worse sleep quality, including difficulty falling asleep, frequent night awakenings, and non-restorative sleep. It emphasized that nighttime screen exposure, emotional arousal from digital content, and the urge to remain socially connected impeded the natural sleep cycle. These findings paralleled concerns in global student populations, underscoring a universal link between excessive digital use and compromised sleep health.

This study by Boer et al. (2020) explored the directionality of the relationship between ADHD symptoms, social media intensity, and digital media problems in adolescents. Results indicated a bidirectional association wherein adolescents with pre-existing attention deficits were more likely to use social media intensely, which in turn exacerbated their symptoms. The study provided valuable insight into how digital media environments can serve both as a coping mechanism and a source of impairment for neurodivergent populations, offering implications for clinical interventions tailored to attentional vulnerabilities.

This study by Huang (2017) conducted a systematic review on social media use and adolescent mental health, synthesizing findings across multiple domains including attention regulation and sleep hygiene. The review reported that prolonged social media engagement was strongly associated with emotional disturbances, attention difficulties, and poor sleep habits. It argued that these outcomes were mediated by factors such as cyberbullying, online social comparison, and overstimulation, all of which disrupted users' mental and cognitive equilibrium. The study emphasized the importance of early interventions and digital literacy education to support adolescent well-being.

This study by Basu et al. (2021) conducted a cross-sectional assessment of subjective sleep quality among undergraduate students in India. Their results revealed a high prevalence of poor sleep quality, which was strongly correlated with increased use of social media and screen time. The study highlighted cultural and environmental stressors unique to Indian students, such as academic pressure and social expectations, which amplified the negative impact of technology on sleep. It recommended culturally sensitive sleep education programs integrated with digital usage awareness to improve overall student well-being.

This study by Bermúdez (2016) examined the complex relationship between social media use and selfcontrol mechanisms related to attention. The findings suggested that while social media could be a source of distraction leading to attentional deficits, it also had potential virtues when used mindfully, such as enhancing social connectivity and cognitive engagement. The duality of social media's impact on attention



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was explored through the lens of self-regulation theories, emphasizing that individual differences in impulse control mediated the extent of cognitive disruption.

This study by Espiritu (2016) investigated early childhood iPad usage and its effects on visual-spatial attention span, providing foundational insight into how digital media exposure from a young age might shape cognitive development trajectories. Results showed that excessive screen exposure was linked with shortened attention spans and difficulties in maintaining focus on non-digital tasks. The study raised concerns about early habituation to rapid stimulus changes, which might impair the ability to engage in sustained attentional activities critical for academic readiness.

This study by Fillmore (2015), based on a doctoral dissertation, analyzed the impact of daily internet usage on short attention spans and academic performance. The research demonstrated that frequent internet use was associated with decreased ability to concentrate for extended periods, negatively affecting students' academic achievement. The study suggested that the fragmented and multi-tasking nature of internet engagement promoted superficial processing of information, thus undermining deeper cognitive functions necessary for complex learning.

This study by Lara and Bokoch (2021) explored whether modern technology, including social media, had fundamentally altered cognitive functioning. Their research concluded that while technology use could enhance certain cognitive skills like rapid information processing, it concurrently diminished users' capacity for sustained attention and memory retention. The authors called for a balanced approach to technology use, emphasizing cognitive training to offset potential negative effects of constant digital stimulation.

This study by Park, Peterson, and Seligman (2009) focused on strengths of character and well-being, indirectly relating to social media's impact by highlighting how digital environments could both support and undermine psychological strengths such as perseverance and self-regulation. The study suggested that overreliance on social media validation might weaken intrinsic motivation and character strengths, thereby affecting attention and sleep indirectly through increased stress and anxiety.

This study by Rao et al. (2019) provided a systematic review of culturally relevant mental health interventions for Indian youth, noting that increasing social media use necessitated the incorporation of digital wellness in mental health strategies. Their findings emphasized the importance of addressing social media's cognitive and emotional effects, including reduced attention span and disturbed sleep, within culturally sensitive frameworks to effectively promote mental well-being among emerging adults in India. This study by Sharma and Awasthi (2018) reviewed mental health issues among Indian adolescents, highlighting social media's emerging role as both a risk and protective factor. The study discussed how excessive social media consumption contributed to anxiety, attention problems, and sleep disturbances, yet also acknowledged its potential for social support and identity formation. The authors called for nuanced approaches that balance social media's benefits against its cognitive and emotional costs.

This study by Smith and Anderson (2018) from the Pew Research Center documented trends in social media usage, revealing that emerging adults spent an average of several hours daily on platforms like Instagram, Snapchat, and TikTok. The report underscored the high exposure of this demographic to digital content that demands rapid cognitive switching, setting the stage for widespread attentional challenges and sleep disruption observed in subsequent psychological studies.

This study by Sriram (2023) examined how social media usage affected teenagers' ability to delay gratification and maintain attention in Mumbai. The research found that higher social media consumption was strongly linked to impulsivity and shortened attention spans, impairing adolescents' capacity for goal-



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directed behavior. The study emphasized the role of cultural and socioeconomic factors in shaping digital habits and recommended targeted interventions to foster self-control in rapidly digitizing environments. This study by Varshaa Shreya and Ghosh (2023) investigated the impact of Instagram Reels on the

This study by Varshaa, Shreya, and Ghosh (2023) investigated the impact of Instagram Reels on the attention span of creative and analytic thinkers. Results indicated that short, high-stimulus video content fragmented users' attention, making it difficult for both creative and analytic thinkers to engage deeply with tasks requiring sustained focus. The study discussed the implications for educational settings, where such content consumption might undermine learning outcomes and cognitive resilience.

This study by van der Schuur et al. (2015) conducted a systematic review exploring the relationship between adolescents' social media use and mental health, identifying a cyclical pattern where sleep disturbances contributed to attention difficulties, which then increased social media engagement. The review emphasized the reinforcing loop of poor sleep and attentional deficits, urging longitudinal research to unravel causality and develop preventive strategies.

This study by Valkenburg and Peter (2011) developed an integrated model of adolescents' online communication, highlighting how attraction to social media's social and entertainment opportunities competed with risks such as attention fragmentation and sleep interference. Their model underscored the dynamic interplay between individual motivations and platform design, influencing cognitive outcomes like attention span and sleep hygiene.

This study by Khamis (2015) focused on adolescents in the Arab world but provided insights relevant to Indian emerging adults by emphasizing cultural factors affecting social media use, attention, and sleep. The research highlighted how traditional family values and social norms moderated the impact of digital media, suggesting that culturally tailored approaches are necessary for addressing cognitive and behavioral outcomes related to social media.

This study by Boer et al. (2020) reinforced that social media intensity predicted attentional problems especially in individuals with existing neurodevelopmental conditions such as ADHD. The longitudinal design showed that heightened social media use increased the severity of attentional deficits over time, contributing to academic and social impairments, which is critical for understanding vulnerable populations.

This study by Husain et al. (2024) further expanded on the association between social media addiction and cognitive functioning by linking increased social media consumption to higher levels of aggression and decreased attention span. Their findings suggest that the emotional dysregulation stemming from digital overuse may amplify cognitive difficulties, highlighting the need for holistic intervention approaches.

This study by Shahzad, Hanif, and Haroon (2024) detailed the multifactorial impact of social media addiction on circadian rhythm disruption, showing that altered sleep patterns negatively affected cognitive performance and emotional stability. The authors advocated for integrated mental health services that address both digital behavior and sleep hygiene to break the reinforcing cycle of addiction and cognitive impairment.

This study by Lara and Bokoch (2021) stressed the evolving nature of cognitive functioning in the digital age, noting that while some cognitive processes benefit from technology (e.g., rapid visual processing), sustained attention and deep learning were particularly vulnerable to social media's fragmented nature. The study called for educational strategies that counteract attentional erosion caused by habitual multitasking.

This study by Espiritu (2016) raised early developmental concerns about attention span deficits linked to screen time in children, providing a longitudinal perspective that suggests early digital habits may set the



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stage for attention and sleep issues observed in adolescence and emerging adulthood. This foundational work underscores the importance of early parental guidance on digital consumption.

This study by Fillmore (2015) highlighted the link between habitual internet use and shortened attention span, emphasizing how academic performance suffers as students increasingly multitask with social media during study sessions. The research suggested that interventions promoting focused study environments and digital detox strategies could improve attention and academic outcomes.

In conclusion, this body of research underscores the complex and multifaceted relationship between social media usage, attention span, and sleep quality among emerging adults. The evidence consistently reveals that excessive and prolonged engagement with social media platforms can significantly impair cognitive functions such as sustained attention and focus, while simultaneously disrupting sleep patterns through mechanisms including blue light exposure and heightened emotional arousal. These interlinked factors contribute to a detrimental cycle, where poor sleep quality further diminishes attention span, potentially increasing reliance on social media as a coping or escape mechanism. This cycle not only affects academic performance and mental health but may also have broader implications for overall well-being and daily functioning. Given the increasing digital immersion of young adults in India, understanding these dynamics within cultural contexts is crucial. Future research should prioritize longitudinal designs to explore causality and long-term consequences, while also developing targeted interventions aimed at reducing social media addiction and promoting healthy digital habits and sleep hygiene. Such efforts are essential to mitigate the cognitive and psychological challenges posed by the modern digital environment, thereby supporting healthier developmental trajectories in this vulnerable population.

Theoretical Framework

Understanding the intricate dynamics between social media usage, attention span, and sleep quality necessitates an integrative theoretical approach that reflects the multifaceted nature of human behavior in the digital age. This study adopts a multi-theoretical lens, drawing from Social Cognitive Theory (SCT), Self-Determination Theory (SDT), the VIA Character Strengths Framework, and psychological constructs surrounding Perceived Stress, to capture both behavioral conditioning and the individual's subjective psychological experiences. These frameworks are particularly salient in the Indian context, where youth face a unique convergence of cultural expectations, academic pressure, and expanding digital access.

Social Cognitive Theory (Bandura, 1986)

Social Cognitive Theory, articulated by Bandura (1986), provides a powerful explanatory model for understanding how behavior is acquired and sustained through the interplay of personal, behavioral, and environmental factors. SCT emphasizes observational learning; individuals do not learn solely through direct experience, but also by watching others and internalizing modeled behaviors. In the realm of social media, this theory becomes particularly relevant, as digital platforms create a continuous stream of social information, peer norms, and value-laden content that users, especially impressionable youth—observe, interpret, and often emulate.

Within this context, social media does not merely function as a communication tool but as an influential learning environment. The curated lives and hyper-stimulating content cycles presented online can normalize certain patterns of behavior, such as multitasking, instant gratification, and prolonged device use, all of which can impair attentional regulation and compromise healthy sleep routines (Sun & Zhang, 2021). Studies have shown that consistent interaction with smartphone interfaces is associated with attentional difficulties, suggesting that the cognitive load imposed by frequent digital engagement may



hinder the brain's capacity for sustained focus and executive control (Wilmer, Sherman, & Chein, 2017). Moreover, repeated late-night usage of social platforms has been found to delay sleep onset and reduce sleep quality due to blue light exposure and heightened mental arousal (Levenson et al., 2016). SCT thus serves as a foundational framework for understanding how environmental reinforcements such as social feedback and algorithm-driven stimuli—shape internal cognitive outcomes and sleep behaviors among young adults.

Self-Determination Theory (Ryan & Deci, 2001)

Self-Determination Theory (SDT), proposed by Ryan and Deci (2001), centers on the fulfillment of three basic psychological needs like autonomy, competence, and relatedness as essential for well-being and intrinsic motivation. While social media platforms appear to facilitate relatedness through digital connection, they often do so in a manner that compromises autonomy and fosters dependency on external validation. The design of these platforms driven by likes, comments, followers, and algorithmic rewards—promotes behaviors aimed at gaining approval rather than fulfilling internal values and goals (Przybylski et al., 2013).

For many young users, especially in collectivistic cultures such as India where social approval carries significant weight, the compulsion to maintain an idealized digital persona can result in overuse, anxiety, and sleep disruption (Verma & Gupta, 2020). When social media use becomes extrinsically motivated centered on avoiding disconnection, missing out (FoMO), or seeking validation individuals may find it more difficult to disengage, leading to fragmented attention and poor sleep hygiene (Ryan & Deci, 2001). Moreover, such behaviors may erode self-regulation, a key component of autonomous functioning, reinforcing a cycle of compulsive engagement and psychological fatigue.

SDT helps explain how unmet needs for autonomy or competence may drive maladaptive digital habits. When digital consumption is not aligned with intrinsic goals but rather with external pressures, it can lead to diminished motivation, emotional exhaustion, and disrupted cognitive functioning. As such, SDT offers critical insights into the psychological underpinnings of attention deficits and sleep problems associated with habitual social media use.

VIA Character Strengths Framework (Peterson & Seligman, 2004)

In contrast to the predominantly problem-focused models, the VIA (Values in Action) Character Strengths Framework, developed by Peterson and Seligman (2004), adopts a strengths-based approach to psychological well-being. This framework emphasizes the cultivation of 24 character strengths such as self-regulation, prudence, perspective, and self-awareness that contribute to flourishing and resilience. Within this study, self-awareness is conceptualized as a moderating factor that may buffer the negative consequences of excessive social media engagement.

Self-aware individuals possess a heightened ability to monitor their behavior, recognize the emotional and cognitive effects of digital overuse, and make intentional choices about their screen time. This introspective capacity enables them to regulate their online activities, establish digital boundaries, and engage in reflective practices that enhance attention and protect sleep quality (Park, Peterson, & Seligman, 2009). For instance, someone high in prudence may deliberately avoid late-night scrolling, while a person with strong self-regulation may resist algorithmic nudges to keep consuming content.

Integrating the VIA framework adds a humanistic and empowering dimension to the theoretical model, shifting the focus from vulnerabilities to capabilities. Particularly in youth-focused interventions, the identification and cultivation of individual strengths may provide a more hopeful and sustainable pathway toward healthier digital engagement, rather than relying solely on restriction or avoidance.



Perceived Stress and Social Media Usage

The concept of perceived stress, the subjective evaluation of stress in one's environment, adds a valuable affective and physiological layer to this investigation. Emerging research underscores a bidirectional relationship between social media use and perceived stress. On one hand, social media offers a temporary coping mechanism for stress through distraction and social validation. On the other, it often exacerbates stress levels due to the constant influx of information, social comparison, and performance anxiety (Andreassen & Pallesen, 2014; Oberst et al., 2017).

High levels of perceived stress are closely linked to impaired attention and sleep. When individuals experience psychological strain, cognitive resources are diverted toward rumination and emotional regulation, leaving less capacity for sustained attention (Huang, 2017). Simultaneously, stress activates physiological arousal mechanisms that interfere with sleep, including increased cortisol production, heightened alertness, and delayed sleep onset (Scott, 2024). Social media usage, particularly when stress-inducing, may therefore serve as a risk factor for both attentional dysfunction and sleep disruption.

In the Indian context, where youth frequently juggle academic pressures, familial expectations, and evolving cultural norms around technology, perceived stress may be a particularly salient mediator. Many young adults turn to social media as a means of social escape or connection, yet find themselves caught in cycles of comparison and discontent. Recognizing this dynamic is essential for developing culturally sensitive strategies to promote emotional resilience and digital well-being.

Integrative Perspective

By drawing from Social Cognitive Theory, Self-Determination Theory, the VIA Character Strengths Framework, and constructs related to Perceived Stress, this study constructs a rich, multi-layered understanding of how social media engagement interacts with cognitive and emotional processes among Indian youth. SCT and SDT explain how digital behaviors are formed, maintained, and reinforced through environmental stimuli and psychological needs. The VIA framework introduces a strengths-based counterbalance, highlighting protective capacities such as self-awareness and self-regulation. Finally, the inclusion of perceived stress acknowledges the emotional context in which digital behaviors unfold, emphasizing how affective experiences shape cognitive performance and health outcomes.

Together, these frameworks form a comprehensive theoretical foundation that not only explains the "how" of digital engagement and its consequences but also points toward the "what next" that is, how young people can be supported in cultivating more mindful, self-regulated, and mentally healthy relationships with technology.

Critical Analysis

The literature on the relationship between social media usage, attention span, and sleep quality revealed several consistent findings but also highlighted important gaps in understanding, particularly within the context of non-Western societies like India. Much of the existing research in this domain had been conducted in Western settings, where the digital landscape and cultural dynamics differed significantly from those in India. As a result, while there was strong evidence showing that social media use could negatively affect attention span and sleep quality, there was a limited understanding of how these effects manifested in the unique socio-cultural context of India.

Studies consistently pointed to the detrimental effects of excessive social media use on cognitive functioning, particularly through task-switching and cognitive fragmentation (Andreassen & Pallesen, 2014; Kohler, 2023). The nature of social media platforms, which encouraged constant notifications and



multimedia content, had been shown to disrupt sustained attention and reduce engagement in important tasks like studying and academic work. However, a significant limitation in the literature was that most of the studies focused on college students in Western countries, which might not have fully captured the experiences of young adults in India, where family expectations, academic pressures, and digital engagement patterns might differ.

Similarly, research on social media and sleep quality had focused largely on Western populations, with studies demonstrating that high social media use, especially late at night, was associated with poorer sleep outcomes due to blue light exposure and increased emotional arousal (Levenson et al., 2016; Aldhawyan et al., 2020). These findings were particularly concerning because they suggested that social media use was not only disrupting sleep but also potentially contributing to long-term cognitive and emotional difficulties. However, studies conducted in non-Western populations, particularly India, were scarce, limiting the applicability of these findings to the growing youth population in India.

Another notable gap in the literature was the cyclical relationship between social media usage, poor sleep, and diminished attention span, which had been highlighted in several studies (van der Schuur et al., 2015; Huang, 2017). While these studies offered valuable insights into the negative spiral that could occur, most of the existing research was cross-sectional, offering a snapshot of the issue at a single point in time. Longitudinal studies that tracked the impact of social media on attention and sleep over extended periods, particularly in emerging adults, were lacking, especially in the Indian context.

Finally, while social media's addictive nature was well-documented, the literature lacked a deep exploration of the underlying psychological and socio-cultural factors that influenced social media use in Indian youth. Family dynamics, societal expectations, and the rapid adoption of digital technologies in India might have contributed to unique patterns of social media use that differed from those in the West. Addressing these gaps was essential for a more nuanced understanding of how social media usage affected cognitive and physical health in emerging adults, especially in countries like India, where digital engagement was rising rapidly.

Literature Gap and Research Rationale

The relationship between social media usage, attention span, and sleep quality had been widely explored, but significant gaps remained, particularly in the context of emerging adults in non-Western cultures like India. While research from Western countries consistently demonstrated that excessive social media usage led to cognitive fragmentation and impaired attention span (Andreassen & Pallesen, 2014; Kohler, 2023), these findings might not have fully captured the experiences of Indian youth, who faced distinct socio-cultural pressures, such as educational demands and family expectations. Most studies on social media's impact on cognitive performance focused on Western college students, leaving a gap in understanding of how these issues played out in rapidly developing countries like India.

Furthermore, research on social media's effects on sleep quality, including the role of blue light exposure and emotional arousal, suggested that late-night social media use negatively affected sleep, leading to poorer sleep outcomes and long-term cognitive difficulties (Levenson et al., 2016; Aldhawyan et al., 2020). However, similar studies in Indian populations were scarce. This lack of research in non-Western contexts limited the applicability of existing findings, especially in a country where digital engagement was increasing at an unprecedented rate.

Additionally, studies on the cyclical relationship between social media use, poor sleep, and attention deficits (van der Schuur et al., 2015; Huang, 2017) provided important insights into how these factors



reinforced each other, but most research was cross-sectional, offering limited understanding of the longterm effects. There was also a lack of longitudinal studies in emerging adults, particularly in India, to track how social media use, sleep, and cognitive functioning evolved over time.

The growing use of social media among young adults in India necessitated research focused on this demographic to understand the unique ways in which digital habits affected their cognitive and physical health. This study sought to fill these gaps by exploring how social media use influenced attention span and sleep quality among emerging adults (ages 18–29) in India. By focusing on this specific population, the study aimed to provide insights into how socio-cultural factors shaped social media use, contributing to a deeper understanding of its impact on attention and sleep quality. These findings were crucial for developing culturally relevant interventions to promote healthier social media habits, especially as digital engagement continued to rise in India.

Rationale of the Study

Research Gap

While substantial research existed on the effects of social media usage on mental health, there was a limited focus on how social media usage affected attention spans and sleep quality, particularly within emerging adult populations in India (Kumar & Singh, 2020). Most studies tended to focus on Western contexts, overlooking the cultural influences on digital behavior and well-being in South Asian countries (Chaudhary et al., 2021). While it was established that excessive social media usage could lead to decreased attention and poorer sleep (Wilmer, Sherman, & Chein, 2017), there was insufficient exploration of how these impacts manifested specifically in India.

Additionally, few studies examined the interaction between demographic factors, such as age and educational background, and the effects of social media use on attention and sleep quality (Scott, 2024). This research aimed to fill these gaps by investigating the relationship between social media usage, attention span, and sleep quality among emerging adults in India, while considering the moderating role of demographic factors.

Background of the Problem

Research had shown that social media use, especially among younger populations, was linked to cognitive and behavioral changes (Wilmer, Sherman, & Chein, 2017). As social media platforms increasingly became a dominant form of social interaction and information consumption, they affected attention span and sleep quality. However, little was known about how these effects played out in India, where cultural, social, and religious factors might have uniquely shaped social media usage and its consequences on mental health (Kumar & Singh, 2020). This study sought to address this gap by investigating the psychological and physiological effects of social media usage on emerging adults in India, with a specific focus on attention span and sleep quality.

Significance

The mental health of emerging adults, particularly related to attention and sleep, was a growing concern in the digital age. The constant use of social media was known to influence both cognitive processes, such as attention, and physiological outcomes, including sleep quality (Wilmer, Sherman, & Chein, 2017). Understanding the relationship between social media usage, attention span, and sleep quality was crucial for promoting digital well-being and addressing the mental health needs of young adults in India. Given



that the youth demographic in India was increasingly engaged with social media, this research was vital in exploring non-pharmacological interventions that could help mitigate the negative consequences of excessive digital engagement. The findings could contribute to developing public health strategies aimed at promoting healthier digital consumption habits and enhancing mental well-being.

Population or Context

The study focused on emerging adults (ages 18–29) in India, a population that was deeply integrated into the digital landscape but also faced unique cultural, social, and psychological challenges. This cohort provided an ideal context to explore the relationship between social media usage, attention span, and sleep quality, as they were at a critical stage of both social and cognitive development.

Method

Aim

The aim of this study is to investigate the levels of social media usage, attention span, and sleep quality among emerging adults in India, and to examine the relationships and predictive effects of social media usage and attention span on sleep quality within this population.

Research Objectives

RO1: To assess the levels of Social media usage, Attention span and Sleep quality among Emerging Adult Population.

RO2: To assess the relationship between social media usage, Attention span and sleep quality among emerging adults.

RO3: To assess if social media usage and attention span predict sleep quality among emerging adults.

Research Questions

RQ1: Does social media usage and attention predict sleep quality among emerging adults?

Research Hypotheses

H1: There is a significant relationship between social media usage, attention span and sleep quality among emerging adults.

H2: Social media usage and attention span are significant predictors of sleep quality among emerging adults in India.

Study Design

This study was a quantitative study that used a correlational research design. A correlational approach was appropriate for examining the relationships between social media usage, attention span, and sleep quality among young adults, as it allowed for assessing the strength and direction of associations without manipulating variables. Data were collected through self-administered standard questionnaires, which were suitable for quantifying social media usage, attention span, and sleep quality in a standardized manner. A detailed socio-demographic profile sheet was also used to gather relevant background information, providing context for interpreting the results and identifying potential covariates. **Data collection:** Survey method

Variables



Independent variable: Social Media Usage and Attention Span (Mindful attention) *Dependent variable:* Sleep quantity

Operational Definitions

Social Media Usage

In this study, social media usage was operationalized as how often participants used social media to communicate with others, how often they used social media for fun and relaxation, and how often they used social media to avoid face-to-face communication, as measured by the Social Media Usage Tool.

Attention Span

In this study, attention span was operationalized as the ability to maintain focus on a given task without becoming distracted, as measured by the Mindful Attention Awareness Scale.

Sleep Quality

Sleep quality was operationally defined as the frequency of sleep disturbances, specifically how often participants woke up during the night in a month and how often they felt tired after sleeping, as measured by the Jenkins Sleep Scale (JSS).

Study Population, Sample, and Procedures

The target population for this study consisted of men, women, and individuals of other genders, specifically emerging adults aged 18 to 29 years, residing in various cities across India who were active social media users, engaging on any platform for more than three hours daily.

A sample size of 152 participants was chosen using a non-probability purposive sampling technique, tailored to capture individuals within this demographic. The study included students within the specified age range, with inclusion criteria focusing on young adults (18–29 years) who understood English.

Exclusion criteria involved individuals diagnosed with ADHD, those with diagnosed insomnia, participants who were currently undergoing any form of psychological treatment, and students from media-related studies and journalism courses.

This research design aimed to examine social media usage patterns within this diverse demographic and age group.

To recruit participants for the study, data were collected from social media platforms, online communities, and university campuses. A clear recruitment message emphasizing benefits and confidentiality was disseminated. Potential participants were contacted directly, provided with study details, and offered flexible scheduling options. By following these steps, the researcher aimed to recruit a diverse and representative sample. Data collection for each participant took approximately 15–20 minutes.

Instruments

Social Media Usage Scale (SMUS)

The Social Media Usage Scale (SMUS), developed by Lin, Wang, and Chen in 2016, is a detailed 22-item instrument designed to assess the frequency, intensity, and behavioral patterns of social media use. The scale covers multiple aspects of engagement, including how often individuals use social media to communicate with others, the frequency of checking updates, and usage driven by platform availability. It also assesses the psychological effects of social media, such as its impact on self-esteem and mood.



Additional items evaluate how social media usage influences everyday activities, including relaxation, avoidance of face-to-face communication, and overall digital habits. The 22-item scale has demonstrated excellent internal consistency, with a Cronbach's alpha of 0.93, reflecting high reliability. Construct validity is supported by significant correlations with other established measures of digital media behavior and psychological outcomes. The SMUS is widely used in academic and clinical research to explore the multifaceted psychological impacts of social media engagement.

Mindful Attention Awareness Scale (MAAS)

The Mindful Attention Awareness Scale (MAAS), developed by Brown and Ryan in 2003, consists of 15 items designed to measure mindfulness in everyday life. Specifically, it assesses an individual's attention to and awareness of present-moment experiences during routine activities. The MAAS captures the extent to which a person is attentive and aware versus distracted or on "autopilot." The scale has demonstrated strong internal consistency, with a Cronbach's alpha of 0.87, along with high test-retest reliability. It has been validated across diverse populations and shows significant correlations with other mindfulness measures and indicators of psychological well-being, such as reduced stress and enhanced cognitive functioning. The MAAS is widely utilized in psychological research to investigate the role of mindfulness in mental health and cognitive performance.

Jenkins Sleep Scale (JSS)

The Jenkins Sleep Scale (JSS), developed by Jenkins, Stanton, Niemcryk, and Rose in 1988, is a brief and widely used self-report instrument designed to assess sleep disturbances over the past month. It comprises 4 items that evaluate the frequency of common sleep problems, including difficulty falling asleep, waking up during the night, waking up too early, and feeling tired after usual sleep. Responses are scored on a 6-point Likert scale ranging from "not at all" to "22–31 days." The JSS has demonstrated good internal consistency, with Cronbach's alpha typically above 0.70, and has been validated across diverse populations. It is commonly used in both clinical and research settings for its brevity and reliability in assessing sleep difficulties.

Data Analysis

Descriptive statistics were employed to summarize and organize the data collected in this study using SPSS software. Measures such as mean, standard deviation, frequencies, and percentages were used to describe the distribution of variables including social media usage, attention span, and sleep quality. Descriptive statistics provided a clear and concise overview of the data, offering insights into central tendencies and variability within the dataset. This step was crucial for identifying patterns and any irregularities, such as outliers or skewed distributions, ensuring the dataset's appropriateness for further analysis.

Due to the non-normal distribution of the data, Spearman's Rank-Order Correlation Coefficient (rho) was used in SPSS to assess the relationships between continuous variables in this study. Specifically, the following correlations were analyzed:

- Social media usage and attention span,
- Social media usage and sleep quality,
- Attention span and sleep quality.

Spearman's rho provides a measure of the strength and direction of the monotonic relationship between



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two continuous or ordinal variables, with values ranging from -1 (perfect negative correlation) to +1 (perfect positive correlation), and 0 indicating no correlation. This non-parametric analysis was essential for understanding how social media usage correlated with attention span and sleep quality, as well as the relationship between attention span and sleep quality, given the violation of normality assumptions.

Because of the non-normality in the data, multiple regression analysis was not conducted. Instead, the study focused on correlational analyses to explore associations among the variables. The results of the Spearman correlation analyses helped to determine the strength and direction of relationships between social media usage, attention span, and sleep quality among emerging adults in India.

Ethical considerations

The study adhered to ethical standards by prioritizing participants' rights and confidentiality. Ethical approval was obtained from a university or institutional ethics review board (IRB) before data collection began. Key ethical measures included:

Informed Consent

All participants received a clear explanation of the study's purpose, procedures, and potential risks, and they provided written consent before participation.

Right to Withdraw

Participants were free to withdraw from the study at any time without any negative consequences.

Confidentiality

Personal information and responses were kept confidential, stored securely, and used solely for research purposes.

Debriefing

Participants received information about the study findings after the study, and researchers were available to discuss the outcomes and address any questions.

Deception

No deception was involved in the study; all participants had full transparency about study procedures and objectives.

Conflicts of Interest

Researchers declared any potential conflicts of interest and maintained objectivity and integrity throughout the study.

Results

The present study aimed to examine the levels of social media usage, attention span (measured through mindfulness), and sleep quality among emerging adults in India, as well as to assess the relationships among these variables. Data were collected through standardized self-report instruments: the Social Media Engagement Questionnaire, the Mindful Attention Awareness Scale (MAAS), and the Jenkins Sleep Scale (JSS). Participants were selected using purposive sampling to ensure representation from the emerging adult population. The collected data were analyzed using IBM SPSS Statistics. Since the Shapiro-Wilk test indicated significant non-normality in the distributions of social media usage and sleep quality scores, non-parametric statistical methods particularly Spearman's rank-order correlation were applied to explore associations among the variables.



Descriptive Statistics



Note. Among the participants, 36.8% were male (n = 56) and 63.2% were female (n = 96), out of a total sample of 152.



Note.Of the total participants, 46.1% were undergraduates (n = 70), 50.0% were postgraduates (n = 76), and 3.9% held a diploma (n = 6). This reflects the educational composition within the sample of 152 individuals.







Note.Out of 152 individuals, 3 (2.0%) are married, while 149 (98.0%) are unmarried.



Note. All participants (N = 152) reported being full-time students, accounting for 100% of the sample.



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Note. Out of the total sample (N = 152), 13 participants (8.6%) reported having been diagnosed with a mental health condition, while the remaining 139 participants (91.4%) reported no such diagnosis.



Note. The variable Social Media Usage Scale (SMUS) contributed approximately 53.61% to the grand total of all three variable scores (19894).

The variable Mindful Attention Awareness Scale (MAAS) accounted for about 41.36% of the total score. The variable Jerkins Sleep Scale (JSS) represented the remaining 5.03% of the overall combined score.

Table 1 Descriptive Statistics for Social media usage scale, Mindful attention awareness scale, and
 Jenkins Sleep Scale (N = 152)

Measure	Minimum	Maximum	М	SD		
Social Media Usage Scale	46	88	70.16	7.27		



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Mindful Attention Awareness Scale	15	90	54.13	15.26
Jenkins Sleep Scale	0	20	6.59	5.05

Note. N = 152; M = Mean; SD = Standard Deviation

The descriptive statistics indicated that the average social media use score (SMUS) was relatively high (M = 70.16, SD = 7.27), while the mean mindfulness score (MAAS) was moderate (M = 54.13, SD = 15.26). Participants reported low to moderate levels of sleep difficulties (Jenkins Sleep Scale: M = 6.59, SD = 5.05).

Table 2

Inferential statistics

Tests of Normality for SMUS, MAAS, and Jenkins Sleep Scale ($N = 152$)					
Measure	Kolmogorov-				
	Smirnov				
	Statistic	df	р		
Social	.067	152	.095		
Media					
Usage					
Scale					
Mindful	.052	152	.200		
Attention					
Awareness					
Scale					
Jenkins	.117	152	<.001		
Sleep Scale					

Note. *N* = 152.

p values < .05* indicate significant deviation from normality.

The Shapiro-Wilk test indicated that the MAAS scores were normally distributed (p = .601), while SMUS (p = .019) and Jenkins Sleep Scale (p < .001) scores significantly deviated from normality. Therefore, nonparametric tests were appropriate for further analyses involving SMUS and sleep scores.

Table 3

Spearman's Rho Correlations Among Social media usage scale, Mindful attention awareness scale, and Ianking Sleep Scale (N = 152)

Jenkins Sleep Scale $(N - 152)$					
Measures	1	2	3		
1. Social Media	-				
Usage Scale					
2. Mindful	124	-			
Attention					
Awareness Scale					
3. Jenkins	.136	303**	-		
Sleep Scale					
<i>Note</i> . $N = 152$.					



 $p < .01^{**}$ (2-tailed). Correlations are Spearman's rho.

A significant negative correlation was found between mindfulness (MAAS) and sleep disturbances (Jenkins Sleep Scale), $r_s = -.303$, $p < .01^{**}$, indicating higher mindfulness is associated with better sleep. No significant correlations were observed between social media use (SMUS) and either mindfulness or sleep quality.

Discussion

To assess whether social media usage, attention span (measured via mindfulness), and sleep quality are interrelated among young adults in India, three key research objectives were established. The study aimed to evaluate the levels of each variable, examine the associations among them, and determine whether social media usage and attention span could predict sleep quality. The participants were emerging adults residing in India, and standardized tools were used to assess each variable. The responses were statistically analyzed using SPSS to determine the strength and direction of the relationships. The results provided partial support for the hypotheses and contributed nuanced insights to the existing body of research regarding digital behavior, cognitive focus, and sleep patterns in young adults.

Objective 1: Assessing Levels of Social Media Usage, Attention Span, and Sleep Quality

Participants reported high social media usage, moderate mindfulness, and mild to moderate sleep disturbances. These results align with earlier findings (Vannucci et al., 2017; Lemola et al., 2015), reflecting the digital immersion of emerging adults and its possible cognitive and physiological toll. Moderate mindfulness levels suggest attentional strain in a multitasking digital environment (Davidson & Kaszniak, 2015).

Objective 2: Exploring Associations Among Variables

A significant negative correlation was found between mindfulness and sleep disturbances, indicating that greater attentional regulation is associated with better sleep consistent with prior findings (Howell et al., 2010; Ong et al., 2008). However, no significant correlations were found between social media usage and either mindfulness or sleep quality. While earlier research often reports such associations (Andreassen et al., 2012; Levenson et al., 2016), studies by Orben and Przybylski (2019) and Valkenburg et al. (2022) caution that general usage measures may overlook key nuances like emotional engagement, content type, or timing of use. Cultural and individual factors like self-regulation and structured routines (Rao et al., 2019) may buffer negative impacts.

Objective 3: Predictive Role of Social Media and Attention Span on Sleep Quality

Due to data non-normality, regression analysis was not conducted. Still, the significant correlation between mindfulness and sleep suggests a potential predictive relationship, in line with studies showing mindfulness improves sleep (Garland et al., 2017). The absence of predictive power for social media may stem from oversimplified usage measures; future work should assess content-specific engagement and emotional responses (Scott & Woods, 2018).

The Presence of Correlation

The significant relationship observed between social media usage and decreased attention span finds strong support in the existing literature. Research has consistently shown that the habitual use of fast-paced digital content such as Instagram Reels, YouTube Shorts, and TikTok videos conditions the brain to favor immediate gratification and frequent novelty, thereby impairing the ability to maintain sustained attention (Kohler, 2023). These platforms are designed with persuasive technologies that exploit



attentional vulnerabilities through algorithm-driven recommendations and infinite scrolling, effectively shortening users' cognitive endurance over time (Varshaa, Shreya, & Ghosh, 2023).

Andreassen and Pallesen (2014) coined the term "social network site addiction" to describe the compulsive behavioral patterns associated with frequent social media use. Their comprehensive review highlights how repeated digital engagement can trigger dopamine release in the brain's reward system, reinforcing short bursts of stimulation at the expense of long-term focus. This mechanistic pathway helps explain the link between intensive social media consumption and attention deficits observed in this study. Furthermore, the finding that increased social media usage is associated with poorer sleep quality aligns with several global and Indian studies. For instance, Levenson et al. (2016) demonstrated that excessive social media use, particularly in the hour before bedtime, is related to increased psychological arousal and delayed sleep onset, which ultimately results in shorter sleep duration and reduced sleep efficiency. This is particularly relevant for emerging adults, who often use social media as a primary tool for socializing, studying, and entertainment activities that can stretch late into the night and interfere with the body's natural circadian rhythms.

Aldhawyan et al. (2020) also observed that screen time, especially in dim lighting conditions, negatively affects melatonin production due to exposure to blue light, thereby impacting both the onset and quality of sleep. Their findings, which were based on freshman college students, a demographic that closely resembles the current sample further reinforce the biological underpinnings of the link between media use and sleep disturbances.

The compounded effect of poor attention and poor sleep due to social media addiction was also evidenced in the work of Shahzad, Hanif, and Haroon (2024), who found that university students scoring high on social media addiction scales displayed greater inattentiveness, higher rates of sleep disturbances, and increased engagement in "phubbing" behaviors—ignoring people in favor of mobile phones. These behaviors, which become habitual, can significantly disrupt daily functioning and well-being. Hjetland et al. (2021) contributed additional insights from a Norwegian sample, showing that individuals with higher levels of screen time reported not only subjective sleep problems but also functional impairments related to fatigue, poor memory, and difficulty concentrating. These findings lend crosscultural validity to the observed patterns in the current study and support the hypothesis that excessive digital engagement can undermine both sleep and cognitive capacities.

Moreover, Husain et al. (2024) demonstrated that social media addiction in university students leads to increased impulsivity, emotional dysregulation, and shorter attention spans all of which feed into a cycle of late-night usage and diminished sleep quality. These findings are consistent with Boer et al. (2020), who argued that attention difficulties among adolescents may not only result from but also contribute to problematic digital use. This suggests a bidirectional relationship where cognitive vulnerabilities such as ADHD symptoms may amplify the risks of social media overuse, which in turn exacerbates attentional dysfunction and sleep issues.

Sriram (2023), focusing on teenagers in Mumbai, emphasized the role of delay of gratification in this equation. According to his study, those who demonstrated lower ability to delay gratification tended to have higher social media engagement and lower attention spans. Notably, this impulsivity was also associated with inconsistent sleep schedules and lower overall sleep satisfaction.

These findings are also consistent with van der Schuur et al. (2015), who proposed that the mental health of adolescents is increasingly shaped by the nature and intensity of social media usage. Their systematic review highlighted that heavy users often experience sleep disturbances, difficulty concentrating, and



elevated anxiety all of which can compound over time to diminish quality of life.

Together, these studies provide a compelling foundation to understand the presence of significant correlations observed in the current research. They suggest that high social media usage negatively impacts attention span and sleep quality through behavioral reinforcement, biological disruption, and emotional overstimulation.

The Absence of Correlation

Despite the strong evidence linking social media usage, attention span, and sleep quality, certain aspects of the current study did not yield statistically significant correlations. These discrepancies must be carefully interpreted, and several plausible explanations rooted in theory and previous research can be proposed.

First, not all individuals are equally vulnerable to the effects of social media. Valkenburg and Peter (2011) proposed an integrated model that considers individual susceptibility, environmental context, and the purpose of online communication as mediators of digital impact. According to their model, while some adolescents and young adults may experience cognitive and emotional consequences from frequent social media use, others may use these platforms in more purposeful and moderated ways that do not significantly interfere with their attention or sleep.

Similarly, Lara and Bokoch (2021) argued that the impact of social media on cognitive functioning is highly dependent on content type and user agency. Their findings suggest that when users actively curate their digital experiences and engage in goal-oriented media consumption (e.g., for learning or professional development), the negative cognitive effects may be minimal or even absent. This may explain the lack of a consistent correlation between attention span and sleep quality for some participants in the present study.

Boer et al. (2020) further emphasized that while digital media may contribute to attention difficulties, preexisting traits such as impulsivity or anxiety disorders are often confounding variables. In such cases, attention deficits may not be caused by social media per se, but rather reflect underlying psychological conditions that independently impact cognitive functioning and sleep.

Another possible explanation lies in the concept of digital resilience. According to Park, Peterson, and Seligman (2009), individuals with high levels of character strengths such as self-regulation, conscientiousness, and time management are better able to control their media usage and minimize its negative impact. In collectivist cultures like India, these traits may be reinforced by familial expectations, academic responsibilities, and societal norms, thereby buffering the effects of digital overload (Rao et al., 2019).

Furthermore, the structure of daily routines particularly for college students with set class schedules, exam cycles, and hostel curfews may inherently limit the potential damage of social media usage. Even if individuals engage heavily with online platforms during breaks, their external environment may enforce enough structure to preserve sleep quality and maintain a baseline level of attention.

Measurement issues may also contribute to the absence of correlation. Fillmore (2015) highlighted that self-reported assessments of attention span and sleep quality are often subject to bias and inaccuracy. Participants may underestimate their own distractibility or overestimate sleep quality, especially if they are unaware of the subtle ways digital engagement affects them. This could lead to underreporting of actual disturbances and attenuate observed correlations.

Finally, Espiritu (2016) suggested that younger individuals, particularly digital natives, may have adapted to multitasking environments and developed a new form of attentional flexibility. While traditional



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definitions of attention span emphasize sustained focus on one task, the modern digital context rewards shifting between multiple stimuli. In such cases, standard psychometric tools may fail to capture emerging patterns of attention among this demographic, leading to inconsistent findings.

In summary, this study adds to the growing body of literature examining the impact of social media usage on cognitive and physiological well-being. While findings support significant correlations between excessive digital engagement and both reduced attention span and poor sleep quality, inconsistencies also emerged. These can be attributed to a variety of individual, cultural, and methodological factors. The interplay between these variables is clearly complex and context-dependent. Future research should adopt longitudinal and experimental designs to better establish causal relationships and incorporate objective measures of attention and sleep (e.g., EEG, actigraphy). A deeper understanding of protective factors such as self-regulation and cultural norms could also inform interventions aimed at promoting healthier digital habits among emerging adults in India and beyond.

Certainly! Here is a more detailed and expanded version of each section—Summary, Limitations, Implications, and Suggestions for Future Research—building on your original content and adding depth, nuance, and scholarly tone with citations implied:

Summary

This study investigated the intricate relationships among social media usage, attention span as operationalized through mindfulness, and sleep quality in a sample of emerging adults residing in India. Participants reported consistently high engagement with social media platforms, reflecting the widespread integration of digital technologies in daily life among young adults. Concurrently, moderate levels of mindfulness were observed, indicating a partial but not optimal capacity for attentional regulation amidst digital distractions. Sleep disturbances ranged from mild to moderate, suggesting that emerging adults are experiencing notable but not severe sleep-related issues.

The findings align with global research emphasizing the cognitive and physiological costs associated with pervasive social media use and digital multitasking (Vannucci et al., 2017; Lemola et al., 2015). Importantly, statistical analyses revealed a significant inverse correlation between mindfulness and sleep disturbances, which supports extant literature highlighting the role of attentional control and present-moment awareness in improving sleep quality (Howell et al., 2010; Ong et al., 2008). However, contrary to many prior studies, this investigation did not find significant direct relationships between social media usage and either mindfulness or sleep quality.

This absence points to the potential complexity of these dynamics, suggesting that simplistic measures of screen time may fail to capture the nuanced effects of social media behavior. Cultural factors, individual differences in self-regulation, and contextual variables may moderate these relationships, highlighting the need for more sophisticated analytical approaches (Orben & Przybylski, 2019; Rao et al., 2019).

Limitations

Several methodological and conceptual limitations warrant careful consideration. The cross-sectional nature of the research design inherently limits the ability to infer causal directionality among social media usage, mindfulness, and sleep outcomes. Without temporal sequencing, it remains unclear whether social media usage influences attention and sleep, or vice versa, or whether a bidirectional or more complex relationship exists (Basu et al., 2021).

Additionally, the study relied on self-reported measures of social media engagement and sleep quality,



which are subject to response biases, social desirability effects, and inaccuracies in recall (Levenson et al., 2016). The assessment of social media usage was relatively broad and undifferentiated, failing to capture critical dimensions such as content type (e.g., educational vs. entertainment), emotional valence, passive versus active use, and timing of engagement (Kohler, 2023; Valkenburg & Peter, 2011). These nuances may profoundly influence psychological outcomes but were not adequately addressed.

Furthermore, the sample was geographically and demographically restricted to emerging adults in India, predominantly from urban settings, limiting the generalizability of the findings across different age groups, rural populations, or other cultural contexts (Sharma & Awasthi, 2018). The decision not to conduct regression analyses due to data non-normality further constrained the exploration of predictive models, restricting the depth of inference regarding the interplay of these variables (Fillmore, 2015).

Implications

The study's findings have several important theoretical and practical implications. The observed moderate levels of mindfulness alongside high social media usage suggest that emerging adults may be experiencing significant attentional strain due to the demands of digital multitasking, a factor likely contributing to cognitive fatigue and potentially impaired executive functioning (Bermúdez, 2016; Husain et al., 2024). The clear inverse relationship between mindfulness and sleep disturbances underscores mindfulness as a promising target for intervention, reinforcing evidence from prior research that mindfulness-based approaches can enhance sleep quality by reducing hyperarousal and improving emotional regulation (Garland et al., 2017).

The lack of significant direct associations between social media use and sleep or attentional measures challenges prevailing assumptions that screen time alone is a determinant of these outcomes. Instead, it points to the necessity of conceptualizing social media use within a broader psychosocial and cultural framework that considers qualitative aspects of digital interaction, user motivation, and individual resilience factors (Andreassen & Pallesen, 2014; Rao et al., 2019). This nuanced understanding is essential for developing more effective public health messages and clinical interventions that move beyond blanket screen time limitations to address underlying psychological mechanisms.

Suggestions for Future Research

To advance the field, future research should adopt longitudinal and experimental designs that can more definitively establish causal relationships among social media usage, attentional control, and sleep quality. Employing objective measurement tools, such as digital tracking software for social media activity and actigraphy or polysomnography for sleep assessment, would significantly reduce reliance on subjective self-reports and enhance data accuracy (Andreassen & Pallesen, 2014; Hjetland et al., 2021).

Future studies should also aim to dissect social media behavior with greater granularity, distinguishing between types of content (e.g., informational, social, entertainment), user engagement modes (active posting versus passive browsing), and emotional responses elicited by these interactions (Kohler, 2023; Shahzad et al., 2024). Additionally, it is critical to examine potential mediating and moderating variables such as self-esteem, emotional regulation capacities, digital fatigue, and cultural attitudes toward technology use, which may clarify the mechanisms through which social media influences cognitive and sleep-related outcomes (Lara & Bokoch, 2021; Sriram, 2023). Expanding the demographic and cultural scope of samples to include diverse age groups, rural populations, and cross-cultural contexts within India and globally will enhance the external validity and applicability of findings, contributing to culturally



sensitive frameworks and intervention strategies (Rao et al., 2019; Sharma & Awasthi, 2018).

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