

**RELATIONSHIP OF PROBLEMATIC SOCIAL MEDIA USE, FEAR OF MISSING
OUT, LONELINESS AND EVENING CHRONOTYPE WITH SLEEP QUALITY
AMONG YOUNG ADULTS: A MEDIATION- MODERATION ANALYSIS**

A thesis submitted for the requirement of the degree of

Masters of Arts in Psychology

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ABSTRACT

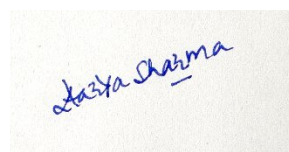
The present study sought to explore the mediating role of fear of missing out (FoMO) and the moderating role of loneliness in the relationship between problematic social media use (PSMU) and sleep quality. This cross-sectional, correlational study involved a sample of 200 young adults aged 18 to 30 years from a university in Punjab. The data were collected using standardised instruments such as the Pittsburgh Sleep Quality Index, the Berger Social Media Addiction Scale, the Fear of Missing Out Scale (FoMOS), the UCLA Loneliness ULS-8, and the Reduced Morningness-Eveningness Scale (rMEQ). Correlational analysis indicated that problematic social media use and evening chronotype are negatively correlated with sleep quality. Mediation analysis was conducted using Hayes' PROCESS macro revealed that FoMO significantly mediated the relationship between problematic social media use and sleep quality. Moderation analysis was performed using the Hayes' PROCESS macro, which indicated that loneliness did not significantly moderate the impact of social media use on sleep.

Keywords: Problematic Social Media Use, Sleep Quality, Fear of Missing Out, Loneliness, Evening Chronotype.

CERTIFICATE

This document certifies that the thesis titled “ Relationship of Problematic Social Media Use, Fear of Missing Out, Loneliness, and Evening Chronotype with Sleep Quality Among Young Adults: A Mediation-Moderation Analysis” has been submitted in partial fulfilment of the criteria for the Masters of Arts degree in Psychology at the Thapar School of Liberal Arts & Sciences, Thapar Institute of Engineering and Technology, Patiala, and represents a legitimate research effort conducted by the candidate under the guidance of Dr. Sarika Mishra, Assistant Professor at the Thapar School of Liberal Arts & Sciences.

Additionally, it is confirmed that this work has not been presented, either in part or in whole, for the attainment of any other degree or diploma at this institution or any other.



(AARYA SHARMA)

This is to certify that the above statement made by the student concerned is correct and true to best of my knowledge.



Dr. Sarika Mishra

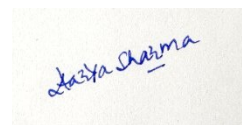
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CANDIDATE'S DECLARATION

I hereby state that the dissertation titled “Relationship of Problematic Social Media Use, Fear of Missing Out, Loneliness, and Evening Chronotype with Sleep Quality Among Young Adults: A Mediation-Moderation Analysis” submitted to the Thapar Institute of Engineering and Technology, as part of fulfilling the requirements for earning a Master of Arts degree in Psychology, is the product of my independent research conducted under the guidance of Dr Sarika Mishra. I also confirm that this work has not been presented before, in whole or in part, to any other university or institution for the purpose of obtaining any degree, diploma, or other academic recognition.

All sources of information and support received throughout this research have been properly acknowledged.



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CHAPTER 1

INTRODUCTION

Sleep is one of the most fundamental elements required for maintaining ideal physical and mental wellness as well as functionality. Increasingly, a growing number of young people are finding it difficult to achieve adequate quality sleep. Research from the last couple of decades indicates that there are clusters of psychological and behavioural factors contributing to this trend. Specifically, recent studies have identified problematic social media use, the fear of missing out (FoMO), feelings of loneliness, and evening chronotypes as related to poor sleep quality. Researchers have independently linked each of these variables to poor sleep quality. However, no prior study has examined whether combinations of these four variables are related to poor sleep quality. In the current study, we aim to examine how these four variables contribute, both individually and in combination, to sleep quality among young adults.

1.1 SLEEP QUALITY

Sleep is one of the most essential biological functions. It supports physical health, emotional stability, cognitive efficiency, and overall well-being. A good night's sleep is necessary for the repair of bodily systems, memory consolidation, and the regulation of emotions. On the other hand, poor night's sleep is related to feeling tired, being irritable, having difficulty concentrating, decreased school performance and increased susceptibility to mental illness (Bayoumy et al.,2023).

Sleep quality does not only refer to the number of hours slept. It also includes satisfaction with one's sleep, sleep latency (time taken by an individual to fall asleep), sleep duration (number of hours an individual sleeps per night), sleep continuity, nighttime awakenings, and daytime dysfunction (Buysse et al., 1989). Researchers increasingly view sleep quality as a multidimensional construct and an important indicator of both mental and physical health.

In recent years, poor sleep quality has become more common among young adults. This may result from increased academic pressures, psychological stress, lifestyle adjustments, and increased use of electronic media (Ndubisi et al., 2025). As a result, many young adults do not adhere to traditional sleep-awake cycles by engaging in activities such as smartphone use before bed, which disrupts their circadian rhythm and negatively affects the quality of their sleep. Anxiety, depression, lack of emotional regulation, lower life satisfaction and poorer daytime functioning have all been linked to disrupted sleep patterns in young adults (Lund et al., 2009). Smartphones and social media platforms have become part of our everyday lives, and factors beyond our biology now influence the quality of our sleep. Psychological, behavioural and social elements also influence the quality of our sleep.

Individuals with poor-quality sleep may struggle to fall into deep sleep, maintain it once achieved, or wake early and feel unrested. As a result of these struggles, individuals may experience daytime impairment due to poor-quality sleep (Vaghela & Sasidhar, 2022).

Impairments resulting from poor-quality sleep can affect cognitive, mood, and social functioning. Research indicates that sleep deprivation and poor-quality sleep significantly impair individuals' attentiveness, decision-making skills, self-control, and school performance (Killgore, 2010).

1.2 PROBLEMATIC SOCIAL MEDIA USE

Social media has transformed how people interact with one another, gather and evaluate information, express themselves as individuals, and maintain relationships. Social media, which includes a wide variety of platforms such as Instagram, WhatsApp, Facebook, Snapchat, and X, have become part of the day-to-day life for many young adults. Although social media can provide several benefits, such as providing a means of communication, entertainment, and information, the extensive and unregulated use of social media can be

harmful. Problematic social media use describes a particular way in which someone uses social media excessively and without control, where said usage leads to a decline in psychological, social, academic or professional functioning (Yuste et al., 2025). Therefore, problematic social media use is based on both the duration of time spent on social networking sites and whether the user is able to regulate their use, and whether there are any adverse consequences resulting from that use. Many users utilize various forms of social networking websites to assist in managing their emotional state, reduce stress levels, obtain validation, and help alleviate feelings of boredom and loneliness (Griffiths et al., 2014). Users who exhibit these behaviors frequently possess a high level of desire to maintain contact with others. Hence, repeatedly check notifications on their phones or spend more time on a social network platform than originally intended. When users cannot access their preferred social media platform(s), they often report experiencing feelings of discomfort or distress. Therefore, this type of social media use eventually transforms from voluntary behaviour to compulsive behaviour.

The impact of problematic social media use on individuals' lives is considerable and includes a variety of adverse outcomes such as increased levels of anxiety, depression, decreased levels of self-esteem, disturbances in body image perception, impairment of academic performance and poor-quality sleep (Bányai et al., 2017). Sleep disruption may occur due to the fact that many users scroll through their feeds until very late into the evening. Although users are able to delay bedtimes in addition to disrupting sleep by exposing themselves to screens for an extended period prior to sleeping, they also disrupt circadian rhythm timing and suppress melatonin release, causing difficulty falling asleep (Gale et al., 2024). Additionally, when users engage with emotionally charged or socially stimulating content close to bedtime, there is an increase in cognitive and emotional arousal, which delays the time it takes to fall asleep.

Due to its high prevalence among young adults, the most detrimental effects of problematic social media usage occur during this developmental phase. This is primarily because, during early adulthood peer acceptance, belongingness and social comparison are significant factors which contribute to excessive online behaviour. Social media platforms are also designed to encourage repeated use through notifications, infinite scrolling and variable rewards. As a result, use can gradually develop into a pattern that disrupts healthy routines and sleep. The desire to avoid missing out may cause an individual to remain awake in anticipation of responses to messages, in the hope of getting notifications of new activity from their friends' accounts, or by simply looking at other people's posts as well. A research study also demonstrated that problematic social networking site use is associated with deterioration in quality of sleep, including shorter sleep duration, longer sleep latency, and greater drowsiness in daytime (Hussain & Griffiths, 2019).

1.3 FEAR OF MISSING OUT

Fear of missing out, or FoMO, refers to a constant worry that other people may be having more fulfilling experiences from which one is absent, along with an ongoing need to know what others are doing (Przybylski et al., 2013). The FoMO is fundamentally based on social relationships. Social media provides a space where social relationships and connections are highlighted, as each platform exposes users to a never-ending stream of activity, accomplishments, and social interactions. Due to this flow of information, many individuals experience feelings of exclusivity, ineptness, and fear of being excluded.

FoMO drew attention from researchers increasingly as smartphone use and real-time social updates became widespread. Individuals with high levels of FoMO have reported a pattern of consistently checking their social media feeds, typically out of a sense of urgency to remain informed, reduce feelings of anxiety related to possibly missing important events, etc. (Scott

& Woods, 2019). These frequent checks may make it difficult to relax throughout the day, particularly at night, when the ability to connect with others via social media conflicts with the need to sleep (Yu et al., 2024).

Studies suggest that FoMO is positively correlated with greater late-night social media use, which has been shown to disrupt sleep patterns and negatively affect overall sleep quality (Kaur et al., 2025). Individuals experiencing FoMO frequently perceive themselves as needing to maintain experiencing FoMO frequently perceive themselves as needing to maintain responsiveness and keep note of current events despite potential negative impacts on sleep (Levenson et al., 2016). FoMO might also affect sleep through emotional pathways.

Comparing one's own life to what other people have posted about theirs on social media can also lead to feelings of inferiority, jealousy, or isolation. These feelings can disrupt an individual's ability to wind down before going to sleep. The feeling of being disconnected from online communication can be so uncomfortable that the individual will have a very hard time putting their smartphone down and going to bed, no matter how exhausted they are (Caba-Machado et al., 2024).

FoMO is most prevalent among young adult populations due to the fact that during this phase of life, individuals place a high degree of importance on social identity, peer acceptance, and interpersonal approval. As a result, the need to appear socially aware and informed can create a large sense of obligation toward online platforms. A study conducted by Adams et al. (2020) demonstrated that higher levels of FoMO were positively correlated with increased usage of social media prior to bedtime, as well as negative impacts on sleep quality.

1.4 LONELINESS

Loneliness is a very unpleasant feeling that occurs due to a discrepancy between the social connections one desires and those one currently possesses (Peaplaun & Perlman, 1982). Being

physically alone does not equal experiencing loneliness. A person could be surrounded by people but still feel lonely. A person is lonely if they do not feel connected emotionally or relationally with those around them. Therefore, loneliness represents the perception of social isolation, and the unfulfilled need for interpersonal relations, which is also viewed as an independent risk factor for both mental and physical health issues.

Young adults are now facing growing concerns about experiencing loneliness despite advances in digital technology. Young adults go through many transition phases during their lives, such as relocation to different cities or towns, change in peer groups, increased pressures from academic requirements and increased independence. All these changes create an environment where students are likely to feel increasingly disconnected socially. Many young adults attempt to combat loneliness using digital platforms. However, online interactions do not provide the same type of deep relational support as face-to-face interaction and, in some cases, may exacerbate feelings of isolation and/or enhance feelings of comparison to others (Nowland et al., 2018). As a result, loneliness and digital media usage may create a cyclical relationship that is difficult to break.

Loneliness may cause disruptions in sleep through hypervigilance. Individuals who experience loneliness are more likely to remain vigilant to potential threats and experience greater amounts of emotional distress and ruminations compared to non-lonely individuals. These experiences also contribute to creating a psychological environment that leaves one feeling unsafe (Cacioppo et al., 2002). Psychological safety is required for optimal sleep. For lonely individuals, stress related cognition and emotions may occur at night instead of providing a sense of calmness, thereby causing difficulty falling asleep and staying asleep. Research indicates that individuals who experience loneliness tend to report poor sleep quality, including low sleep efficiency and high levels of daytime functioning impairment

(Matthews et al., 2017). Therefore, based upon this research, it is hypothesised that higher levels of loneliness will correlate with poorer quality sleep in the current study.

1.5 EVENING CHRONOTYPE

Chronotype describes a person's natural tendency for when they prefer to sleep and wake, as well as when they feel most alert and energetic across the day (Horne & Östberg, 1976). In simple words, it reflects whether an individual is a morning type, an intermediate type, or an evening type. People with a morning chronotype tend to sleep earlier and wake up earlier than others. They are generally at their peak alertness during the first half of the day.

Individuals with an evening chronotype usually sleep longer, wake up later, and experience their highest energy levels from late afternoon to early evening.

Both biological and environmental factors shape Chronotype. Genetics, ageing, light exposure, routine, and societal expectations all impact one's chronotype. During adolescence and early adulthood, there is often a shift toward eveningness, leading to later sleep times in this age group (Roenneberg et al., 2007). The difference between what an individual prefers biologically and socially can create a "social jet lag". The mismatch between a person's biological preference and their societal commitments is often called social jetlag, and it can negatively affect sleep quality and daytime functioning.

Evening chronotype has been associated with several adverse consequences, including irregular sleep schedules, shorter sleep on weekdays, poor sleep quality, daytime sleepiness, depressive symptoms, substance use, and heavier nighttime electronic media use (Prat & Adán, 2013). Evening-type individuals are naturally more awake later at night. As a result, they are more likely to be engaged in stimulating activities, including extended social media use, at a time when they should be falling asleep. The use of devices in bed before sleep time can cause a delay in falling asleep, reduce sleep quality and potentially shorten the amount of

sleep available for an individual with early responsibilities the next day. Also, individuals who identify as evening types may experience even more difficulties with their sleep due to digital media. Since they are naturally more active at night, they are more likely to be utilising their cell phones or social media more frequently at these hours. This creates additional opportunity for exposure to artificial lighting, stimulations, and online social interaction while the body prepares to wind down. Studies have demonstrated that individuals identified as evening types exhibit poorer sleep quality than those identified as morning types (Merikanto et al., 2012). Evening types tend to sleep less, keep fewer regular schedules, and find their sleep less restorative. In the present study, we therefore expect evening chronotype to be negatively associated with sleep quality.

CHAPTER 2

REVIEW OF LITERATURE

Psychology, as a field, seeks to understand how a variety of psychological and behavioural processes affect human well-being and health. In recent years, research on assessing sleep quality and its direct implications for mental and physical health, especially among young adults, has increased. Most of this research has identified various psychosocial and behavioural indicators associated with poor sleep. Among these, problematic social media use, fear of missing out (FoMO), loneliness, and evening chronotype have received considerable attention. Each of these variables might affect sleep through unique yet sometimes similar mechanisms. Identifying how they contribute to sleep disturbances will enable us to develop a more complete picture of the problems associated with poor sleep during young adulthood. This study examines the role of these four variables in predicting sleep quality among emerging adults. The following provides a review of the literature that exists regarding the associations between the variables mentioned above and sleep quality.

2.1 PROBLEMATIC SOCIAL MEDIA USE AND SLEEP QUALITY

We define problematic social media use as an unhealthy and uncontrolled way of engaging with the internet and social media sites. Problematic social media use can be thought of as part of a larger category of behavioural addictions (e.g. compulsive video gaming, overeating, etc.). People who experience problematic social media use exhibit characteristics such as excessive thinking about or using social media, a lack of self-control regarding their time spent using social media, mood-altering behaviours while on social media, and withdrawal symptoms, i.e. feeling uncomfortable if they cannot access social media (Banyai et al., 2017). Young adults have higher rates of problematic social media use because many of them rely

on digital technologies to meet their needs for social support, academic communication and recreation.

Problematic social media use may affect sleep in two main ways. First, by accessing stimulating or emotional content during evening hours, individuals may be unable to disconnect cognitively from their devices until later into the evening. Second, exposure to screen-based activities before bed may also suppress melatonin production and disrupt the body's natural circadian rhythm, both of which contribute to difficulty falling asleep (Gale et al., 2024).

Research has shown significant associations between problematic use of online social networks and poor sleep health. Hussian & Griffiths (2019) found that problematic social media use was significantly related to the quality of sleep. Additionally, Banyai et al. (2017) studied a group of adolescents and found that problematic social media use was associated with increased levels of anxiety, depression and disturbed sleep. Wong et al. (2020) conducted a study on university students in Hong Kong to assess problematic social networking site usage and the quality of sleep. It was reported that measures of problematic social media use were positively correlated with deteriorated quality of sleep after controlling for mental distress.

The nexus between problematic social networking site use and disturbances in sleep has been researched to identify the behavioural pathways through which these effects are produced. A study of two cohorts of young adults, full-time students and working professionals, conducted by Tandon et al. (2020), found that compulsive social media usage in part was influenced by Fear of Missing Out (FoMO), which was a significant predictor of disturbed sleep. The researchers' findings also indicated that it is equally important what motivates people's late night social media engagement as their behaviour in this regard. Moretta et al. (2023)

examined a sample of 763 young adults and found that the individuals who experienced poorer sleep quality used the social networking sites at problematically high levels across several symptom areas, such as mood regulation, deficient self-regulation, and negative outcomes. These results support the theory that both sleep disturbances and problematic social media use may create a cyclical effect where each issue reinforces the other.

2.2 FEAR OF MISSING OUT AND SLEEP QUALITY

Fear of missing out, or FoMO, is a persistent worry that other people may be experiencing fulfilling events while one is not present, along with a desire to continue connecting to the happenings of those around one (Przybylski et al., 2013). This is a very social concept, and its relevance has grown in terms of digital media since many digital media platforms offer ongoing streams of information regarding the activities, accomplishments and social events of other individuals. Those with higher levels of FoMO will frequently access their social media accounts during hours of the day or night so as to feel continuously connected to the lives of those around them. This can be particularly detrimental at late hours because it opposes the need for sleep.

There is considerable research that supports a link between FoMO, late-night social networking site use and the quality of sleep. Woods and Scott (2016) reported a strong association between late-night use of social networking sites and disrupted sleep patterns of young adults. Further, the motivation to remain socially connected is seen as a major reason why late-night social media use occurs. The association between social media usage at night and reduced quality of sleep was also supported by Levenson et al. (2016). They found that the urge to check one's social media account at night led to lower quality of sleep among young adults. Adams et al. (2020) provided additional support for these findings. In the study, researchers found that higher levels of FoMO contributed to an increased amount of time

spent using social media at bedtime, which was subsequently associated with decreased quality of sleep. Yu et al. (2024) identified FoMO as a prime motivator for continued engagement with social media at night, thereby providing additional support for the notion that FoMO causes individuals to continue engaging with social media despite recognising that they should be resting. Kaur et al. (2025) demonstrated an association between FoMO and both late-night social media use and measurable sleep disruptions. Caba-Machado et al. (2024) showed that individuals who experience high levels of FoMO find it difficult to disconnect from social media, even after they recognise that they need to go to sleep.

Recent research helps us understand how FoMO affects sleep quality. Camadan and Uzunoğlu (2025) collected data from 663 adults and aimed to examine the mediating role of FoMO and nomophobia in the nexus between doomscrolling and poor sleep quality. Doomscrolling was positively correlated with poor sleep quality. Nomophobia acts as a significant mediator for the nexus between doomscrolling and poor quality of sleep. While FoMO did not independently function as a mediator for the nexus between doomscrolling and poor quality of sleep but sequential mediation of FoMO and nomophobia functioned as a significant positive indirect effect. Therefore, FoMO could possibly amplify the effect that compulsively scrolling through a smartphone has on sleep quality due to interactions with a person's dependence upon their mobile phone.

Basu et al. (2025) examined predictors of sleep quality in a sample of 501 young adults aged 18-25 years old and investigated the potential mediating role of nomophobia. FoMO was significantly and inversely related to sleep quality, and this relationship was mediated by nomophobia. These results suggest that part of FoMO leads to poor sleep quality is through increasing the fear of being disconnected from one's smartphone. Li et al. (2020) demonstrated that FoMO and smartphone addiction together acted as a mediator of the relationship between negative affect and sleep quality among Chinese university students.

These findings suggest that emotional stressors and FoMO could potentially act synergistically to create sleep problems. A positive correlation was established between FoMO and poor sleep quality, measured using the Pittsburgh Sleep Quality Index, among medical students, according to Oliveria et al. (2023), which provides further evidence for the existence of this relationship.

2.3 LONELINESS AND SLEEP QUALITY

Loneliness is an unpleasant and subjective experience that results from a perceived disparity between the quantity of social interaction one experiences (desired) and that which they actually experience (Peplau & Perlman, 1982). In addition, it is also important to remember that simply experiencing physical isolation by itself does not constitute loneliness. A person can have many people nearby, but still feel extremely lonely as a result of having superficial, non-emotional relationships with those people or as a result of a lack of reciprocation in terms of emotions. Young adulthood is becoming increasingly identifiable as a time during which many individuals feel lonely as a direct result of the numerous transitions experienced in young adulthood. Research found that loneliness might disrupt sleep through a mechanism of hypervigilance. Lonely individuals are likely to be in a hyper-vigilant state of heightened physiological and cognitive arousal due to the presence of what they perceive to be a social threat, making it harder to relax or fall asleep (Cacioppo et al., 2002).

The link between loneliness and poor sleep quality is well documented in empirical studies. Matthews et al. (2017), using data collected from a nationally representative longitudinal cohort of young adults, reported that loneliness was related to lower sleep quality, specifically poorer subjective sleep quality and greater daytime dysfunction. Grey et al. (2022), from a sample of 1662 participants, found that generalised anxiety acted as a

mediator for the relationship between loneliness and sleep quality. Thus, loneliness may negatively affect sleep quality directly and indirectly by increasing anxiety.

Nowland et al. (2018) conducted a study where they found that those who used social media more often were more likely to report feeling isolated than those who used it less. A study conducted by Vinod (2023) on young adults in Bengaluru found a significant positive correlation between loneliness and poor sleep quality. Therefore, too much time spent on social media could increase feelings of loneliness rather than mitigating them.

Unlike cross-sectional studies, Simon and Walker (2018) conducted an experiment that involved induced sleep deprivation to examine its influence on behaviours related to social withdrawal and loneliness. The researchers found that the participants who were sleep deprived showed an increase in avoidance of social interaction as compared to the control group. They concluded that loneliness and sleep are interdependent, indicating that loneliness may contribute to difficulty sleeping and, conversely, difficulties with sleep may contribute to increased levels of loneliness over time. Moretta et al. (2023) conducted a study that revealed that young adults who reported experiencing high levels of loneliness and poor quality of sleep were more likely to exhibit severe problematic social media usage. Cacioppo et al. (2002) proposed that chronic loneliness affects sleep patterns through neurobiological mechanisms, including elevated sympathetic nervous system activity, increased cortisol production and disruption of the hypothalamic-pituitary-adrenal axis.

2.4 EVENING CHRONOTYPE AND SLEEP QUALITY

Chronotype is defined as an individual's genetically based preference for their sleep-wake times during the day (Horne & Ostberg, 1976). An individual's position on this spectrum will determine if they are a morning person, an evening person or somewhere in between. An evening person generally wants to go to bed late, get out of bed later in the morning and is

typically more alert at night. However, even though being an evening person may be simply described as a way of life, it is also indicative of an inherent biological delay in an individual's circadian rhythms that has been formed by both their biological predisposition to such delays and/or how they were raised environmentally. Roenneberg et al. (2007) documented a systematic shift towards evening chronotypes in adolescents and young adults in a large population-based study. As a result, chronotype can be considered an important factor in understanding sleep among young adults, who often face early academic or occupational schedules that conflict with their natural inclination to go to bed late.

Various studies have shown that people with an evening chronotype tend to experience poorer sleep quality. Merikanto et al. (2012) found that evening types reported notably less sleep per night, accumulated greater sleep debt, and had lower sleep satisfaction than morning types. Furthermore, Prat & Adan (2013) concluded that the evening chronotype is not only linked with impaired sleep quality, but also linked with a variety of other negative impacts, such as depressed mood, drug or substance abuse, and metabolic dysfunction. One of the potential reasons for this association may be social jet lag, i.e., the difference between one's biological sleep-timing and that required by social obligations such as school or work. This disparity caused by this mismatch could lead to chronic sleep restrictions on weekdays, leading to an accumulated sleep deficit, which evening type individuals tend to have less tolerance for. Recent studies have examined how evening chronotype may interact with technology use and psychosocial variables to affect sleep quality in evening chronotype individuals negatively. In a longitudinal study by Lin et al. (2020), involving 1791 young adults, it was found that problematic social media use was positively associated with the evening type classification and that insomnia mediated the relationship between chronotype and adverse outcomes like anxiety, depression, and daytime sleepiness. This study indicated that not only do evening types experience poorer sleep quality, but they are also likely to

engage compulsively with technology, which can further hamper their ability to achieve high-quality sleep. Wallinheimo and Evans (2025) studied 407 young adults aged 18 to 25 years and found that evening types exhibited a significantly increased rate of problematic smartphone use. Loneliness and anxiety were the mediators in these relationships. Similarly, Huang et al. (2022) demonstrated that evening-type classifications were positively associated with bedtime procrastination among Chinese college students. Basu et al. (2025), in a cross-sectional study involving 501 young adults between the ages of 18 and 25 years, found an inverse association between evening-type chronotype and self-reported sleep quality. Therefore, evening chronotype not only predicts poor sleep on its own but may further intensify the effect of problematic social networking site use and psychological distress on sleep.

CHAPTER 3

RESEARCH GAP AND OBJECTIVES

3.1 RESEARCH GAP

Prior studies have demonstrated that problematic social media use, FoMO, loneliness, and evening chronotype each contribute to poor sleep quality in young adults. Camadan and Uzunoğlu (2025) found that doomscrolling was linked with poor quality of sleep and that this relationship was explained through nomophobia, with fear of missing out (FoMO) playing a role in that pathway. Basu et al. (2025) found that FoMO and evening chronotype both significantly predicted sleep quality in young adults, and that nomophobia mediated these relationships. However, little attention has been given to understanding how these variables interact within a single model.

It is well established that fear of missing out (FoMO) and evening chronotype predict sleep quality, but whether FoMO specifically mediates the link between problematic social networking sites use and quality of sleep remains unclear. Studies that examine fear of missing out (FoMO) as a mediator tend to use general social networking site use or social media use-related affect as predictors, rather than problematic social media use specifically. No study has tested FoMO as a mediator and loneliness as a moderator together. Evening chronotype, too, has mostly been studied in isolation or as a direct predictor of sleep outcomes, and has rarely been placed alongside psychosocial variables such as FoMO and loneliness within the same model. In this study, we address these gaps by examining problematic social media use and evening chronotype as independent variables, Fear of Missing Out (FoMO) as a mediating variable, and loneliness as a moderating variable, with sleep quality as the dependent variable.

3.2 AIM

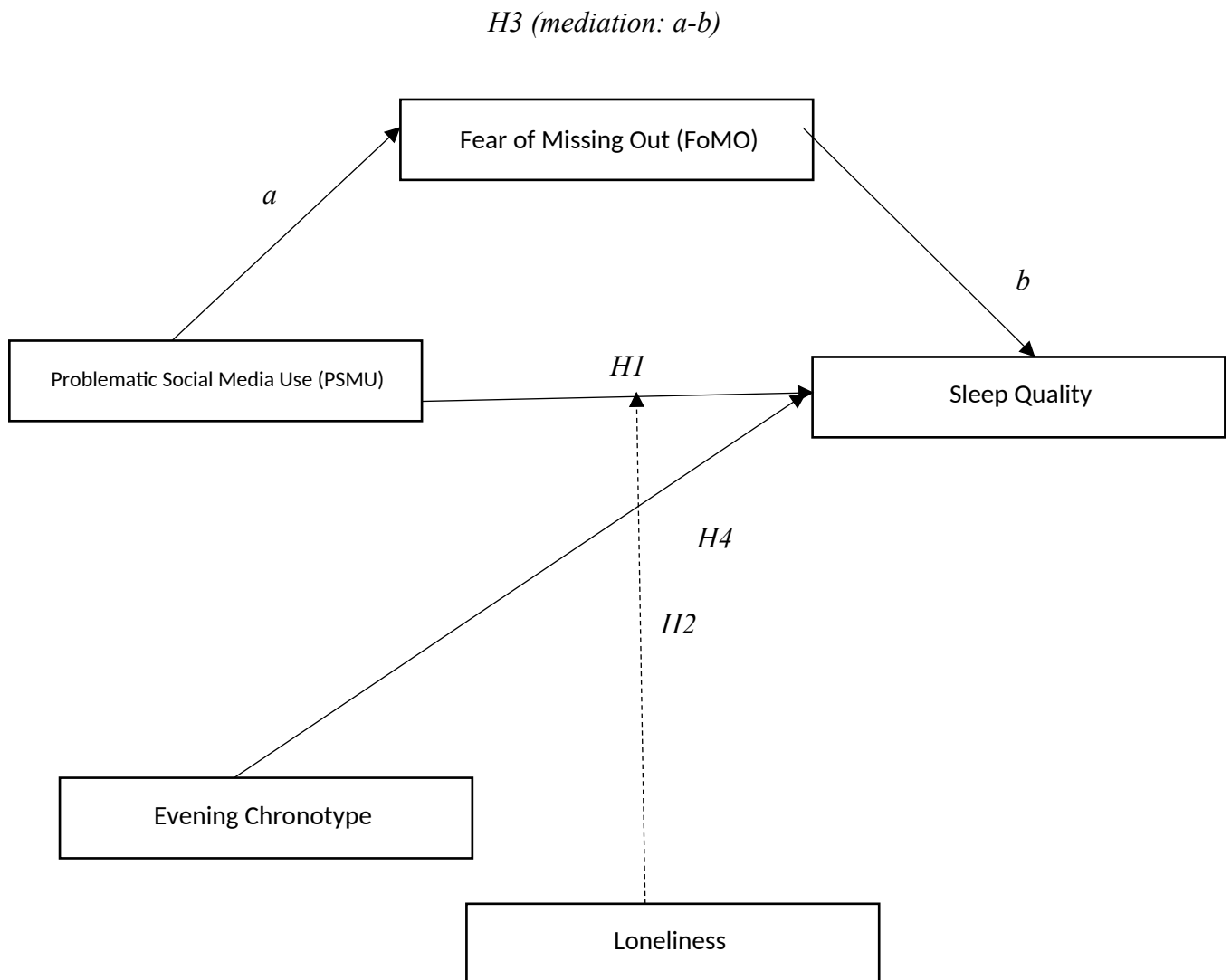
This study aims to examine the associations among problematic social media use, FoMO, loneliness, evening chronotype, and sleep quality, and to explore whether FoMO mediates and loneliness moderates the nexus between problematic social media use and the quality of sleep among young adults.

3.3 OBJECTIVES

This research is guided by four main objectives.

- (a) To study the associations among problematic social media use, FoMO, loneliness, evening chronotype, and sleep quality among young adults.
- (b) To study the link between evening chronotype and quality of sleep among young adults.
- (c) To study the mediating role of fear of missing out in the association between problematic social media usage and the quality of sleep.
- (d) To study the moderating role of loneliness in the association between problematic social media usage and the quality of sleep.

3.4 CONCEPTUAL MODEL



Note: PSMU = Problematic Social Media Use, FoMO = Fear of Missing Out

Dashed arrow indicates moderation. Paths a and b indicate the indirect mediation pathway.

Figure 1: *Conceptual Model Illustrating the Proposed Relationships Between Problematic Social Media Use, FoMO, Evening Chronotype, and Sleep Quality*

3.5 HYPOTHESES

H1: Problematic social media use will be positively associated with sleep quality.

H2: Evening chronotype will be negatively associated with sleep quality.

H3: Fear of missing out will mediate the link between problematic social media usage and the quality of sleep.

H4: Loneliness will moderate the association between problematic social media usage and the quality of sleep.

CHAPTER 4

METHODOLOGY

This section outlines the methods and procedures used to examine whether fear of missing out mediates and loneliness moderates the association between problematic social media usage and the quality of sleep among young adults. In addition, we will examine the link between evening chronotype and the quality of sleep. It is widely recognised that problematic social media use, FoMO, loneliness, and an evening chronotype are associated with the quality of sleep among young adults.

4.1 RESEARCH DESIGN

This study employs a quantitative, cross-sectional correlational research design. This design is appropriate because it enables the collection of objective, numerical data through standardised questionnaires, which can subsequently be analysed using mediation and moderation analyses.

4.2 PARTICIPANTS

Data was collected online through Google Forms. The form was circulated to individuals aged 18 to 30. Participants were selected using convenience sampling. A total of 200 participants completed the survey. The sample included 54 males and 146 females. The inclusion criteria for the participants included that they had to be able to speak fluently in English, as well as being active users on at least one social media platform.

4.3 DATA COLLECTION TOOLS

The measures for assessing the variables, problematic social media use, fear of missing out, loneliness, evening chronotype and sleep quality, that fit best with the research aim were five standardised self-report scales.

4.3a Pittsburgh Sleep Quality Index (PSQI)

The Pittsburgh Sleep Quality Index (PSQI) was developed in 1989 by Buysse et al. as an assessment tool for evaluating the quality of sleep. In addition to assessing overall quality of sleep, this 19-item self-report instrument evaluates all aspects of sleep over a one-month period. It measures quality of sleep across various domains, including subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbance, use of medications or supplements to aid in sleep and daytime dysfunction (Li et al., 2020). Scores are on a scale of 0-3 for each domain of sleep. A higher overall score of up to 21 indicates lower quality sleep. This scale shows a high internal consistency, with a Cronbach's alpha of 0.83. It also demonstrates a strong test-retest reliability of 0.85 (Flores et al., 2023).

4.3b Bergen Social Media Addiction Scale (BSMAS)

The BASMAS was developed by Andreassen et al. in 2012. It is a 6-item scale that measures how much an individual uses social media in a problematic way. Participants respond on a 5-point Likert scale from 1 (very rarely) to 5 (very often) to indicate how often each statement is true of them. The total score is obtained by adding the responses from each of the six questions. A higher total score indicates that an individual may be experiencing problems related to their social media use. A total score of 19 or above is considered indicative of problematic social media use. The scale shows good reliability, with a Cronbach's alpha of 0.86. It also has a test-retest reliability of 0.81 (Lin et al., 2020).

4.3c Fear of Missing Out (FoMOS)

The FoMO scale was developed by Przybylski et al. in 2013. It comprises 10 items that measure the extent to which individuals worry that others might be having rewarding experiences from which they are absent. Participants rate their agreement with each statement on a 5-point Likert scale ranging from 1 (not at all true of me) to 5 (extremely true of me), with higher scores indicating greater fear of missing out. The scale has strong internal consistency, with a Cronbach's alpha of 0.90.

4.3d UCLA Loneliness Scale (ULS-8)

The 8-item short version of the UCLA Loneliness Scale was developed by Hays and DiMatteo in 1987. It was created through a factor analysis of the original 20-item UCLA Loneliness Scale to provide a shorter and more efficient measure of loneliness. Participants respond on a 4-point Likert scale ranging from 1 (never) to 4 (often), with total scores ranging from 8 to 32. Higher scores indicate greater loneliness. Items 3 and 6 are reverse-scored. The scale has good internal consistency, with a Cronbach's alpha of 0.89 (Scott & Woods, 2018).

4.3e Reduced Morningness-Eveningness Questionnaire (rMEQ)

The rMEQ was developed by Adan and Almirall in 1991. It contains 5 items drawn from the original 19-item Morningness-Eveningness Questionnaire and is used to assess a person's preference for morning or evening activities. Total scores range from 4 to 25. A score between 4 and 11 indicates an evening type, a score between 12 and 17 indicates a neither type, and a score between 18 and 25 indicates a morning type. In numerous studies among different populations, the rMEQ has shown good internal consistency, with Cronbach's alpha values typically above 0.70 (Wallinheimo & Evans, 2025).

4.4 Procedure

The purpose of the study was to determine whether FoMO acts as a mediator and loneliness as a moderator in the association between problematic social media use and the quality of sleep, and to investigate how directly an evening chronotype affects an individual's quality of sleep. The study consisted of young adults between the ages of 18 and 30 years.

Data was collected using an online Google Form. The sample was collected using convenience sampling. The link was shared across social media and communication platforms, including WhatsApp and Instagram, and participants were encouraged to share it within their own networks. Before filling out the form, participants were presented with an informed consent form outlining the voluntary nature of participation, the anonymity of their responses, and their right to withdraw at any time.

Participants received the following instructions:

- There are no right or wrong answers.
- Please select the option that best reflects your experience.
- Participation is entirely voluntary, and participants can withdraw at any time.
- All responses will be kept anonymous and confidential.

The form included the Bergen Social Media Addiction Scale (BSMAS), Fear of Missing Out Scale (FoMOS), UCLA Loneliness ULS-8, Reduced Morningness-Eveningness Questionnaire (rMEQ), and Pittsburgh Sleep Quality Index (PSQI), and took approximately 15 minutes to complete.

4.5 DATA ANALYSIS

The data were analysed using the Statistical Package for the Social Sciences (SPSS 22.0), in which descriptive statistics, correlation, and regression were computed. Hayes' PROCESS macro was used for the mediation and moderation analysis.

CHAPTER 5

RESULTS

This chapter presents the findings obtained using different methods. It reports results from descriptive statistics, Pearson's correlation, linear regression and mediation and moderation analyses.

5.1 DESCRIPTIVE STATISTICS

Table 1: *Descriptive Statistics*

	<i>N</i>	Maximum	Minimum	Mean	Standard Deviation
PSMU	200	28	6	14.1	5.23
Sleep Quality	200	21	0	8.21	4.67
FoMO	200	42	10	20.3	7.39
Loneliness	200	30	8	14.0	5.70
Evening Chronotype	200	24	6	15.3	4.05

Note: Problematic Social Media Use (PSMU), Fear of Missing Out (FoMO)

Table 1 presents the descriptive statistics for the study variables, including problematic social media use (PSMU), sleep quality, Fear of Missing Out (FoMO), loneliness, and evening chronotype ($N=200$). Participants reported a mean FoMo score of 20.3 ($SD=7.39$) and a mean PSMU score of 14.1 ($SD=5.23$). Loneliness has a mean score of 14 ($SD = 5.70$). In terms of sleep and biological preferences, the mean sleep quality score was 8.21 ($SD=4.67$), and evening chronotype has a mean score of 15.3 ($SD=4.05$).

Table 2: *Table for Skewness and Kurtosis*

	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
PSMU	0.66	0.17	-0.24	0.34
Sleep Quality	0.33	0.17	-0.48	0.34
FoMO	0.47	0.17	-0.38	0.34
Loneliness	0.82	0.17	-0.33	0.34
Evening Chronotype	-0.21	0.17	-0.77	0.34

Note: Problematic Social Media Use (PSMU), Fear of Missing Out (FoMO)

Table 2 shows an analysis of the distributional properties of the study variables to assess the assumption of normality. Skewness and kurtosis statistics for PSMU, sleep quality, fear of missing out (FoMO), loneliness, and evening chronotype were within the acceptable range of ± 1 . These results suggest that the variables are approximately normally distributed and suitable for further parametric statistical analysis.

5.2 CORRELATION

Table 3: *Correlation Table*

	PSMU	SLEEP QUALITY	FEAR OF MISSING OUT	LONELINESS	EVENING CHRONOTYPE
PSMU	1				
SLEEP QUALITY	0.36***	1			
FEAR OF MISSING OUT	0.31***	0.44***	1		
LONELINESS	0.25***	0.34***	0.78***	1	
EVENING CHRONOTYPE	-0.07	-0.21**	-0.17*	-0.13	1

*Note** $p < .05$, ** $p < .01$, *** $p < .001$

Table 3 presents the Pearson product-moment correlation coefficients for the study variables.

The results indicated that problematic social media use (PSMU) was significantly and positively correlated with PSQI scores, indicating poorer sleep quality ($r = 0.36, p < .001$), Fear of Missing Out ($r = 0.31, p < .001$), and loneliness ($r = .25, p < .001$).

Fear of missing out showed the strongest positive correlation with loneliness ($r = 0.78, p < .001$) and was also significantly associated with poorer sleep quality ($r = 0.44, p < .001$). Conversely, evening chronotype demonstrated a significant negative correlation with sleep quality ($r = -0.21, p < .01$), as well as weaker negative correlations with fear of missing out ($r = -0.17, p < .05$). No significant relationship was observed between problematic social media use and evening chronotype ($r = -0.07, p > 0.05$) and loneliness and evening chronotype ($r = -0.13, p < 0.05$).

5.3 REGRESSION TABLE

Table 4: Linear regression analysis for problematic social media use (PSMU) predicting sleep quality

	Unstandardized Coefficient B	Std. Error	Standardized Coefficient β	t	Adjusted R^2
Problematic Social Media Use	0.32	0.06	0.36	5.34***	0.12

Note *** $p < .0001$

Regression analysis in Table 4 showed that problematic social media use (PSMU) is a significant positive predictor of sleep quality scores ($\beta = .36, t = 5.34, p < .001$). It explained approximately 12% of the variance in the dependent variable (Adjusted $R^2 = 0.12$). The result suggests that higher levels of problematic social media use are associated with a significant increase in sleep quality scores, indicating poorer sleep quality.

5.4 MEDIATION TABLE

Table 5: *Fear of Missing Out (FoMO) as a mediator between problematic social media use (PSMU) and sleep quality*

	Effect b	Std. Error	LLCI	ULCI
PSMU> FoMO> Sleep Quality	0.10	0.03	0.05	0.16
PSMU > Sleep Quality	0.22	0.06	0.10	0.34
Total	0.32	0.07	0.19	0.45

Note: Problematic Social Media Use (PSMU), Fear of Missing Out (FoMO). Results are based on 5,000 bootstrap resamples. LLCI = lower level 95% bias-corrected confidence interval; ULCI = upper level 95% bias-corrected confidence interval.

The results in Table 5 revealed a significant indirect effect of problematic social media use (PSMU) on sleep quality through Fear of Missing Out (FoMO), with the confidence interval ranging from LLCI = 0.05 to ULCI = 0.16. The total effect of PSMU on sleep quality was statistically significant ($b = 0.32$, $p < 0.001$). After accounting for the mediator (FoMO), the

direct effect of PSMU on sleep remained significant ($b = 0.22$, $p < 0.05$). This indicates that FoMO partially mediates the relationship between PSMU and sleep quality.

5.5 MODERATION TABLE

Table 6: *Moderation Analysis*

	Effect	Std.	LLCI	ULCI
	b	Error		
PSMU	0.255	0.067	0.127	0.389
Loneliness	0.223	0.056	0.109	0.327
PSMU x Loneliness	-0.002	0.012	-0.029	0.018

Note: Problematic Social Media Use (PSMU). Results are based on 5,000 bootstrap resamples. LLCI = lower level 95% bias-corrected confidence interval; ULCI = upper level 95% bias-corrected confidence interval.

Table 6 presents the results of the moderation analysis examining the interaction between problematic social media use (PSMU) and loneliness. While PSMU ($b = 0.255$, $SE = 0.067$) and loneliness ($b = 0.223$, $SE = 0.056$) both emerged as significant individual predictors, the interaction effect was not significant because the LLCI (-0.029) is negative and the ULCI (0.018) is positive. This means zero falls within the interval, indicating that loneliness does not significantly moderate the relationship between the variables.

CHAPTER 6

DISCUSSION

The study investigated how problematic social media use (PSMU), fear of missing out (FoMO), loneliness, and evening chronotype are related to sleep quality among young adults. The purpose of this study is to provide an insight into how a combination of behavioural, psychological, and chronobiological factors collectively contribute to sleep disturbances in the young adult population.

In this study, it was hypothesised that problematic social media use would be positively associated with poor sleep quality. It was found that problematic social media use is positively correlated with PSQI scores, suggesting that greater problematic social media use is associated with poorer quality of sleep, which is in agreement with existing literature. The finding aligns with Hussain and Griffiths (2019) and Wong et al. (2020). They identified that excessive digital engagement leads to disturbances in sleep. An explanation of how the relationship exists can be explained by the displacement hypothesis. It states that the time one spends on social media takes away time one could spend sleeping. Exposure to engaging or emotionally salient content makes it difficult to disengage mentally. Gale et al. (2024) demonstrated evidence supporting this through their reporting of melatonin suppression and impaired cognitive disengagement. Academic demands, as well as the social requirement to

interact at the end of each day's schedule, may add additional incentive to engage in late night social media activity.

It was also hypothesised that there is a negative association between evening chronotype and sleep quality. Results suggest that there is indeed a negative correlation between evening chronotype and sleep quality. This is consistent with findings by Basu et al. (2025), who identified that eveningness was a significant predictor for sleep problems in young adults. A clear explanation of why this is can be seen is through the lens of the mismatch hypothesis. Evening preference individuals have an internal rhythm that does not match society's early schedule, such as academics, and they experience a "social jetlag". Young adults tend to accumulate sleep debt due to this mismatch (Roenneberg et al., 2007). In the Indian context, late-night digital engagement combined with social expectations to remain engaged digitally may intensify this effect.

It was expected that fear of missing out (FoMO) would mediate the association between problematic social media use (PSMU) and sleep quality. This study found that fear of missing out (FoMO) partially mediated the link between problematic social media use (PSMU) and sleep quality. The mediation analysis revealed a significant indirect effect (Effect = 0.10). Therefore, it appears that the psychological need to stay engaged via social media partially accounts for why problematic social media use is related to disruptions in sleep.

These findings are consistent with studies conducted by Adams et al. (2020) and Yu et al. (2024), who found that, in addition to other factors, FoMO was also an important reason for why people check their social media at night. Individuals experiencing FoMO can experience cognitive hyperarousal as they think about their past or future social interactions or experiences they have missed. This "mental rehearsal" may continue to delay sleep onset. Both physiological (e.g., light exposure) and psychological factors play a role in causing

sleep disruption. A study by Camadan and Uzunoğlu (2025) found that while FoMO is best used as a mediating variable when combined with nomophobia, the current study shows that FoMO is a powerful factor among Indian young adults, in regard to engagement with digital platforms, even when rest is required.

It was proposed that loneliness would moderate the interrelationship between problematic social media use (PSMU) and the quality of sleep. The results indicated no moderating effect of loneliness in the association between PSMU and the quality of sleep (Effect = -0.002). This indicates that there was no difference in the way that problematic social media use (PSMU) negatively affected the quality of sleep depending on an individual's level of loneliness. These results are contrary to those of Grey et al. (2022), who found that loneliness is a significant disruptor of sleep health. These contradictory findings suggest that while both constructs represent some form of social-emotional distress, they may be conceptually overlapping, representing the same underlying construct. In the context of a collectivist society such as India, loneliness is often strongly linked to fears about social disconnection, because social expectations around relatedness and group belonging are especially strong (Heu et al., 2019). Therefore, the fear of being excluded from other individuals' social interactions may be central to what constitutes feelings of loneliness, thereby increasing the likelihood that FoMO will drive more online behaviour. Thus, it is possible that loneliness functions as a precursor rather than as a moderator in the association between social networking media use and the quality of sleep within this study.

Sleep can be affected by both loneliness and problematic social media use, but through parallel mechanisms. Cacioppo et al. (2002) reported that the experience of being lonely is associated with an increase in physiological vigilance (Cacioppo et al., 2002), whereas problematic social media use interferes with sleep through circadian interference and cognitive stimulation (Gale et al., 2024). Therefore, these two independent pathways may

help explain why loneliness did not significantly alter the strength of the relationship between problematic social media use and sleep quality.

CHAPTER 7

CONCLUSION & FUTURE DIRECTIONS

7.1 CONCLUSION

This study has examined the interrelationships among problematic social media use (PSMU), fear of missing out (FoMO), loneliness, and evening chronotype as predictors of the quality of sleep among young adults in India. The findings demonstrate strong empirical evidence for an emergent perspective on determining sleep quality. There is no single factor that determines sleep quality. However, it arises from the interaction of behavioural, psychological, and chronobiological vulnerabilities. Further, the study showed that fear of missing out (FoMO) was a significant partial mediator between compulsive social media usage and disturbances in sleep, providing insight into how social media can disrupt sleep. Although both loneliness and problematic social media use (PSMU) were independently associated with poorer sleep quality, loneliness did not function as a moderator, indicating that these variables can lead to sleep disturbances through parallel, rather than interactive pathways.

The present study provided substantial evidence for an area of interest. Previous studies have investigated these variables individually. The current study provides a broader scope through integration of chronobiological and psychosocial factors such as eveningness, fear of missing

out (FoMO) and loneliness, into one theoretical model. The principal contribution is to empirically show that fear of missing out (FoMO) is a distinct mediating factor between problematic social media use (PSMU) and sleep quality among Indian young adults, serving as a link between observable digital behaviour and underlying psychological motivations.

Furthermore, this study contributes to our understanding of the role of loneliness in relation to sleep disturbances, as it shows that while loneliness has an association with sleep disturbances, it does not moderate the relationship between problematic social media use (PSMU) and sleep disturbance outcomes, suggesting these two represent independent health challenges that are each worthy of separate interventions.

7.2 IMPLICATIONS

The findings indicate that it would be helpful to think about sleep as an important factor for mental health instead of merely a time-management concern. Since many college students are using social media to deal with loneliness, there is a need for more offline ways for young adults to meet new people and form connections without the need for technology. Since many students are experiencing fear of missing out (FoMO), which is causing them a lot of stress or anxiety, and ultimately affecting their physical health, parents and teachers could teach these students how to practice digital mindfulness. Finally, because some students have an evening chronotype, the traditional school schedule could be adjusted to fit their natural alertness patterns. Students may benefit from scheduling cognitively demanding tasks during late afternoon or evening hours when they experience peak alertness, as opposed to trying to stay awake and focused during the early morning hours when they will have had the least amount of quality sleep.

7.3 LIMITATIONS

Despite providing meaningful insights, this study is subject to a few limitations:

- This study relied on a cross-sectional research design, which restricts the ability to determine the causal relationships between these variables.
- Because the data were collected using self-report methods, potential biases such as social desirability might limit the objectivity of the data.
- The study consisted solely of young adults enrolled in a university, which may limit the extent to which these findings can be generalised to broader populations.

7.4 FUTURE DIRECTIONS

Future research may utilise the findings of this study in numerous ways. First, because of its cross-sectional design, a causal relationship between variables could not be established.

Therefore, future studies can utilise a longitudinal research design to examine the bidirectional nature of the relationships, specifically whether poor sleep quality further intensifies feelings of loneliness or vice versa. It can also be explored whether specific types of social media platforms, like those based on short videos versus those based on text, can cause different levels of sleep disruption. Future studies can include a wider range of participants from different parts of India to see whether digital habits are the same in small towns as in big cities.

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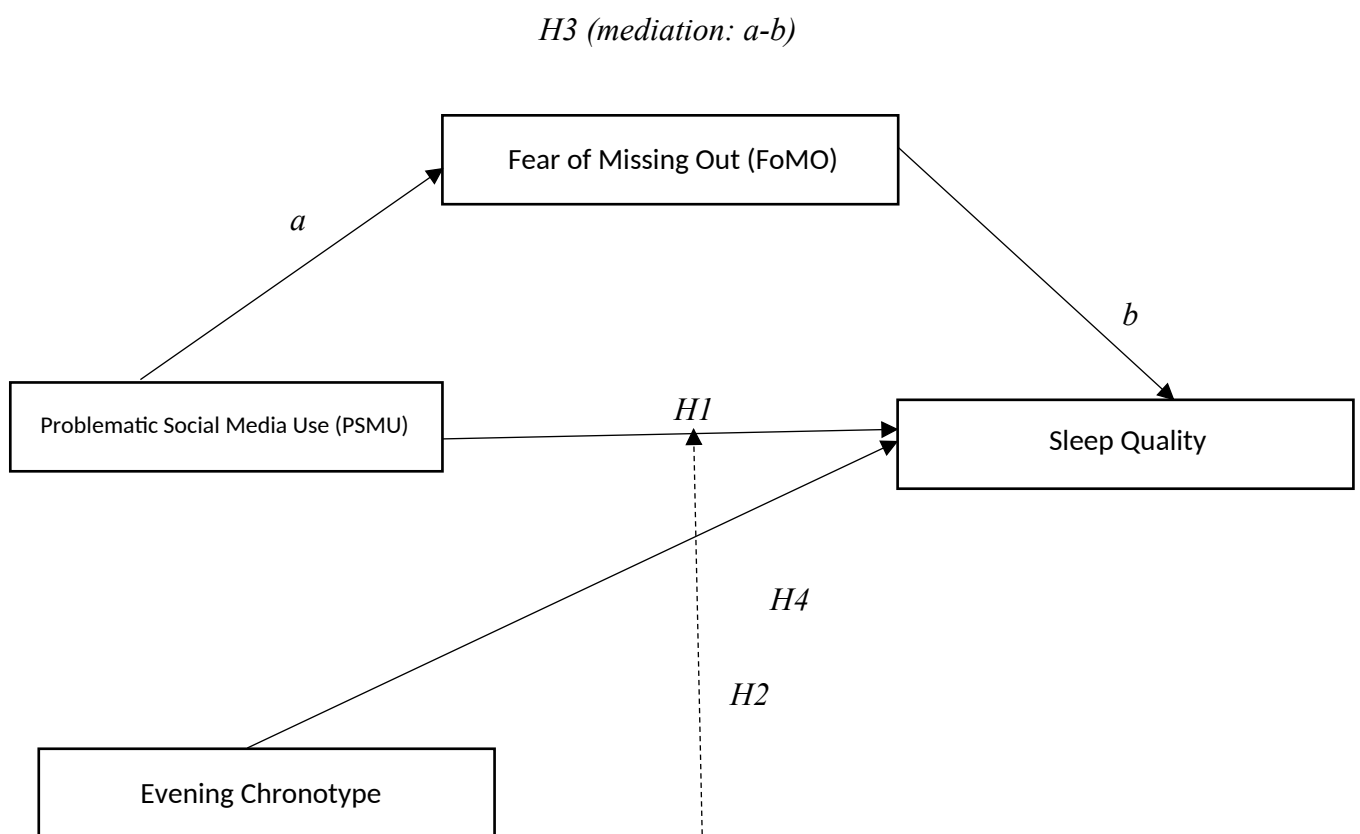
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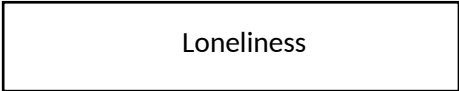
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APPENDIX

APPENDIX A: MODEL

Model 1: Conceptual Model Illustrating the Proposed Relationships Between Problematic Social Media Use, Fear of Missing Out (FoMO), Evening Chronotype, and Sleep Quality





Note: PSMU = Problematic Social Media Use, FoMO = Fear of Missing Out

Dashed arrow indicates moderation. Paths a and b indicate the indirect mediation pathway.

APPENDIX B CONSENT FORM

Greetings!

Dear Participant,

You are invited to take part in a research study investigating the relationship between social media habits (specifically “problematic social media use”), psychological factors like FoMO, loneliness, chronotype, and their collective impact on sleep quality.

This research is conducted by Aarya Sharma, a student of the Master of Arts in Psychology from the Thapar School of Liberal Arts and Sciences (TSLAS), at Thapar Institute of Engineering and Technology, Patiala.

Study Details:

Participation: This is entirely voluntary. You may stop at any time by closing the browser.

Time Commitment: It would take approximately 10-15 minutes to complete the form.

Anonymity: Your responses are strictly anonymous. The data will be used for academic purposes only.

Criteria: To participate, you must be between the ages 18-30 years and use at least one social media platform.

Contact Information: If you have any questions regarding this study, please contact me at asharma_ma24@thapar.edu

By selecting "I agree" below, you acknowledge that you have read this information, are between the ages 18-30 years and voluntarily agree to participate in this research. *

- ☐ I agree to participate
- ☐ I do not agree to participate

APPENDIX C QUESTIONNAIRES

PITTSBURGH SLEEP QUALITY INDEX

INSTRUCTIONS: The following questions related to your usual sleep habits during the past month only. Your answers should indicate the most accurate reply for the majority of days and nights in the past month. Please answer all questions.

1. During the past month, what time have you usually gone to bed at night?

BED TIME _____

2. During the past month, how long (in minutes) has it usually taken you to fall asleep each night?

NUMBER OF MINUTES _____

3. During the past month, what time have you usually gotten up in the morning?

GETTING UP TIME _____

4. During the past month, how many hours of actual sleep did you get at night? (This may be different than the number of hours you spent in bed.)

HOURS OF SLEEP PER NIGHT _____

For each of the remaining questions, check the one best response. Please answer all questions.

5. During the past month, how often have you had trouble sleeping because you...

a) Cannot get to sleep within 30 minutes

Not during the past month_____ Less than once a week _____

Once or twice a week_____ Three or more times a week_____

b) Wake up in the middle of the night or early morning

Not during the past month_____ Less than once a week _____

Once or twice a week_____ Three or more times a week_____

c) Have to get up to use the bathroom

Not during the past month_____ Less than once a week _____

Once or twice a week_____ Three or more times a week_____

d) Cannot breathe comfortably

Not during the past month_____ Less than once a week _____

Once or twice a week_____ Three or more times a week_____

e) Cough or snore loudly

Not during the past month_____ Less than once a week _____

Once or twice a week_____ Three or more times a week_____

f) Feel too cold

Not during the past month_____ Less than once a week _____

Once or twice a week_____ Three or more times a week_____

g) Feel too hot

Not during the past month_____ Less than once a week _____

Once or twice a week_____ Three or more times a week_____

h) Had bad dreams

Not during the past month_____ Less than once a week _____

Once or twice a week_____ Three or more times a week_____

i) Have pain

Not during the past month _____ Less than once a week _____

Once or twice a week _____ Three or more times a week _____

j) Other reason(s), please describe

How often during the past month have you had trouble sleeping because of this?

Not during the past month _____ Less than once a week _____

Once or twice a week _____ Three or more times a week _____

6. During the past month, how would you rate your sleep quality overall?

Very good _____

Fairly good _____

Fairly bad _____

Very bad _____

7. During the past month, how often have you taken medicine to help you sleep (Prescribed or “over the counter”)?

Not during the past month _____ Less than once a week _____

Once or twice a week _____ Three or more times a week _____

8. During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?

Not during the past month _____ Less than once a week _____

Once or twice a week _____ Three or more times a week _____

9. During the past month, how much of a problem has it been for you to keep enough enthusiasm to get things done?

No problem at all _____

Only a very slight problem _____

Somewhat of a problem _____

A very big problem _____

10. Do you have a bed partner or a room mate?

No bed partner or room mate _____

Partner/ room mate in other room _____

Partner in same room, but not same bed _____

Partner in same bed _____

If you have a room mate or bed partner, ask him/her how often in the past month you have had ...

a) Loud snoring

Not during the past month _____ Less than once a week _____

Once or twice a week _____ Three or more times a week _____

b) Long pauses between breaths while asleep

Not during the past month _____ Less than once a week _____

Once or twice a week _____ Three or more times a week _____

c) Legs twitching or jerking while you sleep

Not during the past month _____ Less than once a week _____

Once or twice a week _____ Three or more times a week _____

d) Episodes of disorientation or confusion during sleep

Not during the past month _____ Less than once a week _____

Once or twice a week _____ Three or more times a week _____

e) Other restlessness while you sleep; please describe

Not during the past month _____ Less than once a week _____

Once or twice a week _____ Three or more times a week _____

BERGEN SOCIAL MEDIA ADDICTION SCALE

The Bergen Social Media Addiction Scale is a tool used to measure an individual's level of addiction to social media. It consists of six items that assess an individual's level of preoccupation, withdrawal, tolerance, and negative consequences associated with social media use.

1. You spend a lot of time thinking about social media or planning how to use it.

Very rarely

Rarely

Sometimes

Often

Very Often

2. You feel an urge to use social media more and more

Very rarely

Rarely

Sometimes

Often

Very Often

3. You use social media in order to forget personal problems.

Very rarely

Rarely

Sometimes

Often

Very Often

4. You have tried to cut down on the use of social media without success.

Very rarely

Rarely

Sometimes

Often

Very Often

5. You become restless or troubled if you are prohibited from using social media.

Very rarely

Rarely

Sometimes

Often

Very Often

6. You use social media so much that it has had a negative impact on your job/
studies.

Very rarely

Rarely

Sometimes

Often

Very Often

FEAR OF MISSING OUT SCALE (FoMOS)

Participant Instructions

Below is a collection of statements about your everyday experience. Using the scale provided please indicate how true each statement is of your general experiences. Please answer according to what really reflects your experiences rather than what you think your experiences should be. Please treat each item separately from every other item.

Response Anchors

Not at all true of me	1
Slightly true of me	2
Moderately true of me	3
Very true of me	4
Extremely true of me	5

Items

1. I fear others have more rewarding experiences than me.
2. I fear my friends have more rewarding experiences than me.
3. I get worried when I find out my friends are having fun without me.
4. I get anxious when I don't know what my friends are up to.
5. It is important that I understand my friends "in jokes".
6. Sometimes, I wonder if I spend too much time keeping up with what is going on.

7. It bothers me when I miss an opportunity to meet up with my friends.
8. When I have a good time it is important for me to share the details online (e.g. updating status).
9. When I miss out on a planned get-together it bothers me.
10. When I go on vacation, I continue to keep tabs on what my friends are doing.

UCLA LONELINESS SCALE (ULS-8)

Circle the number to indicate how often each statement describes you.

	Never	Rarely	Sometimes	Often
1. I lack companionship.	1	2	3	4
2. There is no one I can turn to.	1	2	3	4
3. I am an outgoing person.	1	2	3	4
4. I feel left out.	1	2	3	4
5. I feel isolated from others.	1	2	3	4
6. I can find companionship when I want it.	1	2	3	4
7. I am unhappy being so withdrawn.	1	2	3	4
8. People are around me but not with me.	1	2	3	4

REDUCED MORNINGNESS-EVENINGNESS SCALE (RMEQ)

Instructions:

1. Please read each question very carefully before answering.
2. Answer ALL questions
3. Answer questions in numerical order.
4. Each question should be answered independently of others. Do NOT go back and check your answers.
5. All questions have a selection of answers. For each question, place a cross alongside ONE answer only.
6. Please answer each question as honestly as possible, both your answers and the results will be kept, in strict confidence.
7. Please feel free to make any comments in the section provided below each question.

The Questionnaire

1. Considering only your own diurnal rhythm, at what time would you get up if you were entirely free to plan your day?

5 AM- 6 AM

6 AM- 7 AM

7 AM- 8 AM

8 AM- 9 AM

9AM- 10 AM

10AM- 11 AM

11AM – 12 noon

2. After the first half hour after having woken in the morning, how tired do you feel?

Very tired

Fairly tired

Fairly refreshed

Very refreshed

3. At what time in the evening do you feel tired and as a result in need of sleep?

8 PM – 9 PM

9 PM – 10 PM

10 PM – 11 PM

11 PM – 12 AM

12 AM- 1 AM

1 AM – 2 AM

2 AM- 3 AM

4. At what time of the day do you think that you reach your “feeling best” peak?

8:00- 10: a.m.

11:00- 1:00 p.m.

3:00- 5:00 p.m.

7:00- 9:00 p.m.

5. One hears about morning and evening types of people. Which one of these types do you consider yourself to be?

Definitely a “morning” type

Rather more a “morning” than an evening type

Rather more an “evening” than a “morning” type

Definitely an “evening” type