

Effect of Social Media Addiction towards Sleeping Pattern and Knowledge Acquisition among Nursing Students

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ABSTRACT

Background: In recent decades, social media has revolutionised the landscape. Individuals employ social media to obtain Knowledge and information instantaneously. For students, persistent engagement with social media or addiction may produce adverse effects. Social media has become essential to our daily lives, providing various benefits across multiple areas. Social media can indirectly foster addiction, as students often engage with it for prolonged durations. This study examines the impact of social media addiction on nursing students' sleep patterns and knowledge acquisition. **Methods:** This descriptive cross-sectional study included 284 University Kuala Lumpur (RCMP) nursing students studying bachelor's and diploma programs in Ipoh, Perak. The self-administered questionnaire included demographics, the social media addiction scale, the Pittsburgh Sleep Quality Index (PSQI), and knowledge acquisition assessments. Correlational statistical analyses assessed variable relationships. **Results:** There was a weak and statistically non-significant positive correlation between social media addiction and student sleep patterns (Pearson's $r = 0.019$, $p = 0.749$), indicating no meaningful relationship. In contrast, a moderate and statistically significant positive correlation was observed between social media addiction and knowledge acquisition (Pearson's $r = 0.568$, $p < 0.001$), suggesting a reliable association between increased social media use and higher knowledge acquisition. **Conclusion:** The study elucidates the complex interconnections between social media addiction, sleep patterns, and knowledge acquisition among Universiti Kuala Lumpur Royal College of Medicine Perak (UniKL RCMP) nursing students. Social media addiction does impact knowledge acquisition but does not affect sleep quality. To avoid over-reliance, educational institutions may consider using social media as an additional learning resource while promoting moderate usage.

Keywords: Knowledge Acquisition; Nursing Student; Sleeping Pattern; Social Media Addiction; Social Media

INTRODUCTION

As a product of advancing technology, social media has significantly simplified and enriched modern life (Haleem *et al.*, 2022). The extensive application of the term "social media" is occasionally associated with platforms and applications that enable users to create virtual communities to exchange information, ideas, personal communications, and various sorts of content (Aichner *et al.*, 2021). This is due to social media platforms enabling users to interact in a non-physical environment. Social media is a component of our paperless approach. It is extensively employed by the community, especially for engagement and amusement purposes. Social media has significantly altered the environment in recent decades. It is commonly considered adequately engaging, since consumers frequently utilise social media platforms to obtain knowledge and access it effortlessly through a single connection. This also aids individuals in staying knowledgeable about their surroundings, keeping them from being marginalised. Social media can enhance knowledge acquisition by enabling information transmission, providing instructional content, and granting access to thought leaders and influencers (Khan *et al.*, 2021).

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Instagram, Facebook, Twitter, and TikTok spread information as society goes paperless. Social media allows information sharing. Newspapers and pamphlets were the primary news sources before social media. This contrasts with today, when many instructional websites make learning new skills easy with a few clicks. Social media is pervasive; therefore, excessive use or addiction can harm students. Social media use may affect academic performance, emotional and physical health, and sleep habits. Research on social media addiction is prevalent in psychology and communication sciences. As social media sites like Facebook, Instagram, Twitter, and TikTok gain popularity, concerns about addiction rise. Talis (2022) asserts that the swift and extensive accessibility of the Internet is the primary element contributing to the emergence of this addiction, especially among adolescents. Moreover, social media platforms are intentionally designed to captivate consumers by offering diverse opportunities for social engagement. This is achieved through the platforms' user-friendly accessibility. Therefore, they may also have considerable negative consequences (Kurniasanti *et al.*, 2019). Social media addiction is widely acknowledged as a behavioural disease that adversely affects emotional control, sleep quality, academic achievement, and mental well-being, especially in teens and young adults. A recent study by Wang and Wang (2025) delineates how emotional reinforcement mechanisms perpetuate compulsive use behaviours, while other research indicates increased risks of depression and social isolation (Ladi-Akinyemi *et al.*, 2025). Social media addiction profoundly impacts teenage mental health, resulting in heightened anxiety, despair, and emotional difficulties. The findings of this study are essential for informing health policy and prevention initiatives in light of the changing digital environment.

A notable incidence of sleep disruptions is often reported in those struggling with Internet addiction. Alimoradi *et al.* (2019) identified several issues, including the necessity for prolonged sleep durations, delayed bedtimes, abbreviated sleep cycles, worse sleep quality, extended daytime somnolence, disrupted sleep-wake patterns, and heightened sleep duration demands. Alhusseini *et al.* (2022) indicated that students have insufficient sleep, which adversely affects their ability to attain academic success. Moreover, Hossain and Rahman (2021) noted that subjective sleep quality, duration, and daytime dysfunction positively correlate with knowledge acquisition. Moreover, Shafiq *et al.* (2023) discovered that a majority of college students exhibit social media addiction and experience moderate to mild sleep quality issues.

Furthermore, Bamigboye and Olusesan (2017) assert that social networking can aid teenagers currently attending school or university to obtain essential knowledge and skills. The predominant demographic utilising social media technology comprises university students. Most students employ social media for many goals, such as learning, obtaining rapid information access, performing research, participating in educational activities, and engaging in recreational pursuits. As a result, it facilitates learning and the exchange of ideas, ultimately leading to social media addiction.

Previous studies highlight the growing concern of social media addiction among students, driven by the rapid expansion of internet access (Shafiq *et al.*, 2023) and the virtual environment's capacity to foster continuous engagement (Salihin & Raheema, 2023). Despite its integration into education, limited research examines how excessive use affects nursing students, whose academic performance depends on adequate rest and effective knowledge retention. This study addresses this gap by investigating the impact of social media addiction on sleep patterns and knowledge acquisition among nursing students.

METHODOLOGY

Research Design

This quantitative approach and the design adopted a descriptive cross-sectional survey methodology to assess the impact of social media addiction on sleep patterns and knowledge acquisition among Universiti Kuala Lumpur Royal College of Medicine Perak (UniKL RCMP) nursing students. The respondents were from the Bachelor of Nursing and Diploma in Nursing programs.

Participant and Data Collection

This study determined its sample size using the Raosoft calculator, which indicated a minimum of 231 respondents at a 95% confidence level; however, 284 nursing students from UniKL RCMP participated. Inclusion criteria required respondents to be currently enrolled in the nursing program and regular social

media users, aligning with the study's aim of examining social media addiction, sleeping patterns, and knowledge acquisition. Convenience sampling was employed for its practicality, with questionnaires administered online via Google Forms, accompanied by study information and a consent statement before participation.

Research Instruments

The questionnaire used for this study consists of four sections: Section A focused on demographic information of the respondents, such as gender, age, and year of study. Section B assessed social media usage, engagement motives, and students' addiction levels to social media. Section C aimed to assess respondents' sleeping patterns, and Section D aimed to assess their knowledge acquisition. The instruments used in sessions B, C and D were the Social Media Addiction Scale (SMAS) developed by Ünal and Deniz (2015), the Pittsburgh Sleep Quality Index (PSQI) developed by Buysse *et al.* (1989), and ten knowledge acquisition questions adapted from previous research. Section B comprises 15 items adapted from the original Social Media Addiction Scale, and it employed a 5-point Likert scale with response options ranging from "strongly disagree", "Disagree", "Neutral", "Agree", and "strongly agree." The maximum score for social media addiction is 75. The addiction scoring in this study ranged from no addiction (0-15), Mild Addiction (16-30), Moderate Addiction (31-45), and Severe addiction (>46). In section C, the assessment included seven scales that measure sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, the use of sleeping medication, and daytime sleepiness. The respondents were assigned a score ranging from 0 to 3 for each of the seven components, with higher scores indicating worse sleep quality. The scores were then summed to calculate a global Pittsburgh Sleep Quality Index score, which provided an overall assessment of sleep quality. The global score ranged from 0 to 21, with higher scores indicating poorer sleep quality. If the component scores were all 0, the global PSQI score would also be 0, indicating very good sleep quality. If the component scores added up to 1 or 2, the global PSQI score indicated good sleep quality. A global score of 1-7 indicated mild sleep quality. Furthermore, a score of 8-14 suggested moderate sleep quality; lastly, 15-21 indicated severe sleep quality. In section D, ten simple questions are used to assess knowledge acquisition. The questions employed a 5-point Likert scale with response options ranging from "strongly disagree", "Disagree", "Neutral", "Agree", and "strongly agree." The level of knowledge acquisition scoring ranged from low knowledge acquisition (1% - 25%), moderate knowledge acquisition (26% - 75%) and high knowledge acquisition (76% - 100%). The instrument's reliability showed Cronbach's alpha values of 0.827, 0.638, and 0.606 for SMAS, PSQI, and knowledge acquisition, respectively. Feedback was obtained from the senior nursing educators to ensure the survey covered all relevant aspects of the topic. The questionnaire was validated through expert review for content validity. This approach improved instrument accuracy, enhancing data credibility. Descriptive statistics and Pearson correlation are used to analyse the results.

Ethical Consideration

Ethical approval was obtained from the review board of Universiti Kuala Lumpur Royal College of Medicine Perak, Malaysia with reference number RCMP/MREC/2022-2023/BNSH-314 on 3rd January, 2024.

RESULTS

Demographic Data

The demographic characteristics of the study sample reveal that 284 respondents participated in the study, with a significant majority being female; specifically, 221 respondents (77.8%) are female, while only 63 respondents (22.2%) are male. The age distribution shows that the respondents range from 18 to 26 years old, with the largest age group being 19-year-olds, making up 101 respondents (35.6%). This is followed by 21-year-olds at 71 respondents (25.0%) and 24-year-olds at 34 respondents (12%). Other age groups include 20-year-olds with 23 respondents (8.1%), 22-year-olds with 33 respondents (11.6%), 23-year-olds with 12 respondents (4.2%), 18-year-olds with three respondents (1.1%), and 26-year-olds with seven respondents (2.4%). The majority of the respondents, 197 (69.4%), are pursuing diploma-level education, while the remaining 87 (30.6%) are bachelor students. This demographic profile indicates a predominantly female and younger sample, with most respondents engaged in diploma-level studies. The most used social media site was TikTok, followed by Instagram (Table 1).

Table 1: Summary of Demographic Characteristics of the Respondents

Demographic Data	N	%
Gender		
Female	221	77.8
Male	63	22.2
Age		
18	3	1.1
19	101	35.6
20	23	8.1
21	71	25
22	33	11.6
23	12	4.2
24	34	12
26	7	2.4
Level of Study		
Bachelor	87	30.6
Diploma	197	69.4
Most Used Social Media Site		
Facebook	2	0.7
Twitter	24	8.5
Instagram	69	24.3
TikTok	152	53.5
YouTube	33	11.6
Others	4	1.4

Student Addiction to Social Media

According to the average student addiction score of 3.531 with a Standard Deviation (SD) of 0.559, students often exhibit a moderate to high degree of social media addiction. With no responders falling under the “No Addiction” category, the frequency and percentage were 0%. Mild addiction affected a small percentage of respondents (3.2%), with a frequency of 9. “Moderate Addiction” accounted for 40.5% of the sample, with 115 responders, a significant fraction of the total. Major addiction was indicated by the largest group, which comprised 160 respondents and made up 56.3% of the sample (Table 2). Overall, the data suggest that moderate to severe addiction is experienced by most responders, with severe addiction being the most common.

Table 2: Mean and Level of Social Media Addiction

Category	Frequency	Percentage (%)	Mean	SD
Social Media Addiction			3.531	0.5599
Student's Social Media Addiction Level				
No Addiction (0-15)	0	0		
Mild Addiction (16-30)	9	3.2		
Moderate Addiction (31-45)	115	40.5		
Severe Addiction (>46)	160	56.3		

SD= Standard deviation

Students' Sleeping Patterns Quality

Table 3 summarises descriptive information for students' sleep habits as measured by the Pittsburgh Sleep Quality Index (PSQI). The PSQI results show an overall mean score of 1.827 (SD = 0.422), indicating moderate variation in students' sleep quality. Most respondents rated their sleep quality as moderately low (mean = 1.21), had longer sleep latency (mean = 1.535), shorter sleep duration (mean = 1.19), and moderate disturbances (mean = 1.151), while consistently achieving excellent sleep efficiency. Use of sleep medication was minimal (mean = 0.23), and daytime dysfunction was moderate (mean = 0.876). Sleep quality classification revealed that 79.2% had moderate sleep quality, 19.0% mild, and 1.8% severe, with none reporting good sleep. Overall, over 98% experienced mild to moderate sleep disturbances, highlighting the urgent need for targeted interventions to improve rest and support academic performance (Table 4).

Table 3: Overall Scoring and Subcategory for Sleep Quality of the Students

Categories	Minimum Statistics	Maximum Statistics	Mean statistics	SD
Scoring for PSQI			1.828	0.423
Subcategory of PSQI				
Subjective Sleep Quality	0	3	1.21	0.770
Sleep Latency	0	3	1.535	0.937
Sleep Duration	0	3	1.19	1.052
Sleep Efficiency	3	3	3	0
Sleep Disturbance	0	2	1.151	0.527
Use of Sleep Medication	0	3	0.23	0.607
Daytime Dysfunction	0	3	0.877	0.680

SD= Standard deviation

Table 4: Frequency Level of Students' Sleeping Patterns Quality

Level of Students' Sleep Quality	Frequency	Percentage (%)
Good Sleep Quality (1-2)	0	0
Mild Sleep Quality (1-7)	54	19.0
Moderate Sleep Quality (8-14)	225	79.2
Severe Sleep Quality (15-21)	5	1.8

Students' Knowledge Acquisition

Table 5 shows a category breakdown of knowledge acquisition scores among respondents. The scores are classified into poor, moderate, and high knowledge. Out of the total sample, 0.7% of respondents (n=2) fall into the low knowledge category, indicating minimal knowledge acquisition. Most respondents, 71.1% (n=202), are classified under moderate knowledge, suggesting that most individuals have an average level of knowledge acquisition. Meanwhile, 28.2% of respondents (n=80) have high knowledge, indicating significant knowledge acquisition. These findings demonstrate that the predominant level of knowledge acquisition among respondents is moderate, with a substantial portion also exhibiting high levels of knowledge.

Table 5: Scoring for Knowledge Acquisition

Knowledge Acquisition Score	Frequency	Percentage (%)
Low Knowledge (1% - 25%)	2	0.7
Moderate Knowledge (26% - 75%)	202	71.1
High Knowledge (76% - 100%)	80	28.2

Correlation between Social Media Addiction, Sleeping Pattern and Knowledge Acquisition

Correlation analysis showed no significant relationship between social media addiction and sleeping patterns ($r = 0.019$, $p = 0.749$). In contrast, a moderate positive and statistically significant correlation was found between social media addiction and knowledge acquisition ($r = 0.568$, $p < 0.001$), indicating that higher social media use is associated with greater knowledge acquisition. These findings suggest that, when used effectively, social media can serve as a valuable informal learning tool, particularly in academically demanding fields such as nursing (Table 6).

Table 6: Correlation between Social Media Addiction, Sleeping Pattern and Knowledge Acquisition

Variables		Student Addiction to Social Media	Student Sleeping Pattern	Knowledge Acquisition
Student Addiction to Social Media	Pearson Correlation	1	0.019	0.568
	Sig. (2-tailed)		0.749	0.000*
	N	284	284	284
Student Sleeping Pattern	Pearson Correlation	0.019	1	
	Sig. (2-tailed)	0.749		
	N	284	284	
Knowledge Acquisition	Pearson Correlation	0.568		
	Sig. (2-tailed)	0.000*		
	N	284		

*Note: $P < 0.05$ is significant

DISCUSSION

The addition of social media among nursing students

The results show that the majority of students have moderate to severe social media addiction, with no respondents falling into the no-addiction category and only a small proportion reporting mild addiction. This pattern reflects findings by Yeşiltepe *et al.* (2023) and Saud *et al.* (2019), who similarly reported moderate addiction levels among university students. However, it contrasts with Zaw and Azenal (2021) and Wickramasurendra *et al.* (2021), who found milder or no addiction in their samples. Popular platforms such as TikTok, Instagram, and YouTube have become deeply embedded in students' daily lives (Alfaya *et al.*, 2023), offering numerous benefits and fostering excessive use patterns. Research by Izquierdo-Condoy *et al.* (2025) has highlighted the strong link between mobile phone addiction and poor sleep quality among medical students, while Mohamed *et al.* (2025) reported that Facebook addiction in this population is associated with diminished academic performance and higher levels of anxiety and depression. These findings underscore the dual nature of social media, serving as both a resource for learning and connection, and a potential source of behavioural addiction with negative consequences for academic success, mental health, and overall well-being. Given the documented risks, it is essential to develop targeted interventions such as awareness campaigns, self-regulation strategies, and healthy usage guidelines to help students achieve a balanced relationship with digital technologies. This could improve sleep quality, reduce psychological distress, and enhance academic performance in demanding fields such as nursing.

Social media addiction and sleeping pattern quality

The PSQI findings revealed that sleep efficiency had the highest mean score, while the use of sleep medication had the lowest, contrasting with Abu *et al.* (2020), who reported the highest mean for sleep latency. In this study, no significant relationship was found between social media addiction and sleeping patterns, a result consistent with Junior *et al.* (2024). Other recent studies by Aksaka *et al.* (2025) and Merter *et al.* (2025) also indicate that social media use does not significantly impact sleep quality in adolescents and school-age children. However, this differs from Silomba (2022), Shafiq *et al.* (2023) and Zhu *et al.* (2023), all of whom reported significant associations between these variables. Previous research highlights that the accessibility of mobile devices and Wi-Fi, coupled with the tendency to use social media before bedtime, can delay sleep onset and reduce sleep quality. Such disruptions may contribute to academic difficulties, as poor sleep quality has been shown to impair academic engagement and performance (Berdida, 2025). Similarly, Acharya *et al.* (2025) found that adolescents with internet addiction were more likely to experience poor sleep quality compared to their non-addicted peers. These mixed findings suggest that the relationship between social media use and sleep is complex and potentially influenced by mediating factors such as time management, academic pressures, and coping strategies. Nevertheless, the evidence points to the importance of developing targeted interventions to promote healthier social media habits and improve sleep quality, which are crucial for maintaining academic performance and overall well-being among students.

Contribution of social media to knowledge acquisition

The study revealed a significant positive correlation between social media addiction and knowledge acquisition, indicating that higher engagement with social media is associated with greater learning outcomes. This finding supports the work of Kumar and Nanda (2024) and Aljuboory *et al.* (2020), who emphasise that social media serves as an accessible and interactive platform for academic engagement, allowing students to connect with educators, professionals, and peers worldwide while broadening their perspectives. In this study, most participants demonstrated a moderate level of knowledge acquisition, which aligns with Hosen *et al.* (2021), who reported that students exhibit positive knowledge-sharing behaviours, driven by factors such as reputation, virtual communication, and document exchange. Additionally, it serves as an excellent platform for sharing academic articles, assignments, updates, and ideas, as well as for communication and discussion (Abu-Snienh *et al.*, 2020). These studies indirectly support findings regarding the correlation analysis results between student addiction to social media and knowledge acquisition. It demonstrates a significant positive relationship, indicating that higher levels of social media addiction are associated with greater knowledge

acquisition among the students involved in the study. Social media can enhance informal learning by providing students with interactive and easily accessible platforms for academic engagement. This can serve as a significant resource for continuous education and cognitive development. The findings indicate that most participants exhibit a moderate level of knowledge acquisition, aligning with previous studies that highlight students' positive tendencies towards knowledge sharing. Social media's ease of access and user-friendly nature significantly improve its effectiveness in educational settings, promoting smooth knowledge exchange and learning among students. The significant positive relationship between social media addiction and knowledge acquisition suggests that increased interaction with these platforms could enhance students' educational experiences. Nonetheless, while social media is a significant educational resource, weighing its benefits against possible disadvantages is essential, promoting a thoughtful and measured approach to its use.

Limitations

This study is limited to nursing students from a single institution, reducing the generalisability of its findings. Self-reported data may introduce biases, and the cross-sectional design restricts causal interpretation. Additionally, the lack of detailed demographic analysis limits the interpretation of results. Future studies should use longitudinal designs and objective measures to enhance reliability and applicability.

CONCLUSION

This study elucidates the intricate relationships among social media addiction, sleep patterns, and knowledge acquisition in Universiti Kuala Lumpur Royal College of Medicine Perak (UniKL RCMP) nursing students. The results indicate that social media addiction is prevalent among these students, with most exhibiting moderate to severe levels of dependence. Moreover, although no significant correlation was identified between social media addiction and sleep quality, a considerable positive relationship was established between social media addiction and knowledge acquisition. Even though universities utilise social media platforms to improve services and help learners and educators, social media can enhance knowledge by sharing information between students, thus promoting active student involvement.

The study's limitations, such as its single institution focus, reliance on self-reported data, and cross-sectional design, indicate that future research should incorporate larger and more diverse samples across multiple institutions and academic disciplines to improve the generalisability of results. Utilising objective measurement tools, such as mobile application usage trackers and wearable sleep monitors, would enhance data accuracy and minimise self-reporting bias. Longitudinal designs would be used to better understand these relationships and their implications for academic performance and well-being. Incorporating social media into students' lives offers advantages and obstacles. Although these platforms can augment learning by improving engagement and resource accessibility, mitigating the possible hazards linked to their over-utilisation is essential. An equitable strategy combining educators, institutions, and parents is crucial to leverage the advantages of social media while protecting children's academic achievement and well-being. Future studies should explore and evaluate intervention strategies to manage social media addiction among nursing students. These may include digital literacy workshops, time management training, and structured use of educational technologies that integrate social media responsibly into learning environments. Encouraging students to set screen time limits, use apps that promote mindful technology use, and participate in digital detox programs could reduce excessive use without compromising the academic benefits of social media platforms.

Conflict of Interest

The authors declare that they have no competing interests.

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