Volume 3, Issue 10, 2025

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

THE IMPACT OF SOCIAL MEDIA USAGE ON THE SLEEP PATTERNS OF UNDERGRADUATE GBSN STUDENTS

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DOI: https://doi.org/10.5281/zenodo.18107726

Keywords

Social media, Sleep quality, Nursing students, Pittsburgh Sleep Quality Index (PSQI), Cross-sectional study

Article History

Received: 11 October 2025

Accepted: 21 November 2025

Published: 31 December 2025

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Abstract

Background: *Sleep is a critical component of physical and mental well-being, particularly for nursing students who face demanding academic and clinical schedules. Excessive social media usage has been suggested as a factor contributing to poor sleep quality among young adults. Understanding the relationship between social media engagement and sleep patterns is essential for promoting healthy behaviors in this population.*

Aim: *This study aimed to examine the association between social media usage and sleep quality among undergraduate GBSN nursing students in Karachi, Pakistan.*

Methods: *A descriptive cross-sectional study was conducted among 200 undergraduate nursing students from two private nursing colleges. Stratified sampling ensured proportional representation across semesters 2 to 8. Data were collected using a structured, self-administered questionnaire comprising demographic information, social media usage patterns, and the Pittsburgh Sleep Quality Index (PSQI) to assess sleep quality. Data were analyzed using SPSS version 30.0, employing descriptive statistics, Chi-square tests for categorical associations, and Pearson's correlation for relationships between social media duration and PSQI scores.*

Results: *The majority of participants were Male (70%) and aged 21–23 years (47.5%). Instagram (35%) and Facebook (25%) were the most frequently used platforms. Approximately 60% of students engaged with social media multiple times per day. Poor sleep quality was reported in 50% of participants, with an average PSQI score of 6.8 ± 2.5. A significant positive correlation ($r = 0.42$, $p < 0.001$) was observed between daily social media use and PSQI scores. Chi-square analysis revealed a significant association between longer social media use and poor sleep quality ($\chi^2 = 12.34$, $p = 0.006$).*

Conclusion: *High social media usage among nursing students is associated with poorer sleep quality. Educational interventions and promotion of healthy digital habits are recommended to enhance sleep and overall well-being.*

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

INTRODUCTION

Social media are online platforms where users can create, share, and communicate with content using online networks, like Facebook, Instagram, [1,2] WhatsApp, Tik Tok, and YouTube applications. Sleep patterns denote the time, the length, the quality and frequency of sleep periodicity in an interval of 24 hours. [3] The Undergraduate Generic Bachelor of Science in Nursing (GBSN) students refer to those students in the professional nursing education programs who must remain balanced between their academic, clinical, and personal roles. Overuse or uncontrolled use of social media involves increased screen time, use of the media during the night, and compulsive checking habits that can disrupt the normal sleeping patterns. [4,5]

The growth of the social media uptake of undergraduate students has grown tremendously across the globe and the most active group of users is that of the young adults. [6] According to studies, more than 90 % of university students use at least one of the social media sites on a daily basis with a significant percentage of them spending over three hours per day on social media sites. [7,8] The rates of usage are similar or even higher in nursing learners as a result of academic stress, peer interaction, and needs of digital learning. Amongst high social media users, sleep disturbances, including delayed sleep onset, decreased sleep duration, and low sleep quality have been reported frequently. [9]

Sleep constitutes an important physiological process that plays a crucial role in physical restoration, cognitive functions, emotional control, and academic functions. Sleep is good in consolidating memory, attention, decision-making and stress development that are very important to nursing students. [10] Disregards sleeping habits may have adverse consequences on learning capacity, clinical judgment and well-being. Healthy sleep is especially valuable in nursing education since nurses have to maintain constant focus, psychomotor skills, and emotional balance.[11]

The use of social media has been cited as one of the forms of behavior that can break the normal sleep patterns. Screen light exposure inhibits the secretion of melatonin causing a delay in the onset of sleep. The constant alerts and internet communication evokes cognitive and emotional excitement, and one cannot relax before going to sleep. The habit of scrolling and the feeling of missing out frequently continue until late in the night, cutting down on the hours of sleep. [12]

GBSN students experience distinctive academic and clinical stress which can further enhance dependence on social media as a stress-reducing tactic. These factors are stress and fatigue due to academic workload, shift-based clinical rotation, examinations, and performance expectations. Social media can be utilized towards relaxation, social interaction or academic cooperation but overuse can unintentionally lead to sleep deprivation and daytime drowsiness. [13]

Disrupted sleep patterns in nursing students have been linked to poor academic performance, poor clinical-level skills, mood disorders, and high chances of anxiety and burnout. Sleep deprivation can also negatively impact patient safety because it influences hearing, response time, and decision-making in the clinical practice. These are the results that cause the concern about student health and professional competence. [14]

Although there has been increasing global evidence about the use of social media and disturbances in sleep, little research has been conducted with specific reference to undergraduate GBSN students in the nursing education settings. The measures of the effect of social media use on the sleep patterns in this group are important to conduct the necessary intervention, encourage the healthy habits in digital use, and achieve academic success and well-being in future nurses.

Methods

A descriptive cross-sectional study design was employed to examine the association between social media usage and sleep patterns among undergraduate GBSN nursing students. The study was conducted in two private nursing colleges in Karachi, Pakistan, both registered with the Pakistan Nursing Council and affiliated with Dow University of Health Sciences. The study population comprised undergraduate GBSN students enrolled from the 2nd to 8th semesters, including both male and female students, while newly enrolled first-semester students were excluded. A stratified sampling technique was used to

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

ensure proportional representation from each academic year, thereby minimizing sampling bias. The sample size of 200 students was calculated using the OpenEpi sample size calculator, considering a population size of approximately 600 students, a 95% confidence level, 80% power, and an expected frequency of 50%. Students who had passed their first semester and were willing to provide informed consent were included, whereas students with self-reported diagnosed sleep disorders or psychiatric conditions and those unwilling to participate were excluded. Ethical approval was obtained from the relevant Ethical Review Committees, and all ethical principles related to voluntary participation, confidentiality, and informed consent were strictly followed.

Data Collection

Data were collected using a structured, self-administered questionnaire consisting of three sections. The first section captured demographic information, including age, gender, semester, residence, and marital status. The second section assessed social media usage patterns, covering commonly used platforms, duration of daily use, and frequency of engagement. The third section utilized the Pittsburgh Sleep Quality Index (PSQI), a standardized and validated tool designed to assess sleep quality over a one-month period, including components such as sleep latency, duration, disturbances, daytime dysfunction, and overall sleep quality. Face validity of the questionnaire was established through expert review by senior nursing faculty. The PSQI has demonstrated high reliability in previous studies, with a Cronbach's alpha greater than 0.80. A pilot test was conducted on 10 students to ensure clarity and feasibility, and these participants were excluded from the final analysis.

Data Analysis

Collected data were coded, entered, and analyzed using SPSS version 30.0. Descriptive statistics, including mean, standard deviation, frequencies, and percentages, were used to summarize demographic variables, social media usage patterns, and sleep quality scores. Inferential statistics were applied to examine relationships between variables. The Chi-square test was used to assess associations between categorical variables, such as levels of social media usage and sleep quality. Pearson's correlation coefficient was employed to determine the relationship between social media intensity and PSQI global scores. Graphical presentations, including bar charts and pie charts, were used to illustrate key findings. All statistical analyses were conducted at a 95% confidence level, with a p-value of less than 0.05 considered statistically significant.

Results and Analysis

Table 1 presents the demographic profile of the 200 undergraduate GBSN students. The majority of participants were male (70%) and aged 21–23 years (47.5%). Most students were unmarried (90%) and resided with their families (55%). The participants were distributed across semesters 2 to 8, with the highest representation in the 5th semester (20%). This table provides an overview of the sample composition for subsequent analyses.

Table 1: Demographic Characteristics of Participants (N = 200)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	18–20	70	35%
	21–23	95	47.5%
	24–26	25	12.5%
	27 and above	10	5%
Gender	Female	60	30%
	Male	140	70%
Semester	2nd	25	12.5%
	3rd	30	15%
	4th	35	17.5%
	5th	40	20%

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

	6th	35	17.5%
	7th	20	10%
	8th	15	7.5%
Residence	Hostel	90	45%
	With family	110	55%
Marital Status	Single	180	90%
	Married	20	10%

Table 2 shows participants' social media engagement habits. Instagram was the most commonly used platform (35%), followed by Facebook (25%). The largest proportion of students spent 3–5 hours daily on social media (35%), while 60% reported engaging multiple times per day. These findings highlight the intensity and frequency of social media use among nursing students. Understanding these patterns is crucial for examining their impact on sleep quality.

Table 2: Social Media Usage Patterns (N = 200)

Variable	Category	Frequency (n)	Percentage (%)
Daily duration of use	<1 hour	20	10%
	1–3 hours	60	30%
	3–5 hours	70	35%
	>5 hours	50	25%
Most frequently used platform	Facebook	50	25%
	Instagram	70	35%
	TikTok	40	20%
	WhatsApp	30	15%
	Others	10	5%
Frequency of engagement	Multiple times/day	120	60%
	Once/day	50	25%
	Few times/week	20	10%
	Rarely	10	5%

Table 3 summarizes sleep quality among participants using the PSQI. The overall mean PSQI score was 6.8 ± 2.5, indicating that half of the students experienced poor sleep quality. Sleep duration averaged 6.2 hours, with 45% reporting insufficient sleep. Sleep latency and disturbances were also prevalent among a significant portion of students. These results provide insight into the sleep challenges faced by nursing students.

Table 3: Sleep Quality Based on PSQI

Component	Mean ± SD	Frequency of Poor Sleep (n)	Percentage (%)
Sleep latency	32.5 ± 12.1 min	80	40%
Sleep duration	6.2 ± 1.3 hours	90	45%
Sleep disturbances	1.8 ± 0.7	70	35%
Daytime dysfunction	1.5 ± 0.6	60	30%
Overall PSQI score	6.8 ± 2.5	100	50%

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Table 4 illustrates the relationship between daily social media use and sleep quality. Students using social media for more than 5 hours per day had the highest proportion of poor sleep quality (30%). The Chi-square test indicated a statistically significant association ($\chi^2 = 12.34$, $p = 0.006$). Increased social media usage appears linked with poorer sleep outcomes. This table highlights the potential impact of social media intensity on sleep patterns.

Table 4: Association Between Social Media Usage and Sleep Quality

Social Media Usage (Hours/Day)	Poor Sleep Quality (PSQI >5)	Good Sleep Quality (PSQI ≤5)	χ^2 (p-value)
<1	5	15	
1–3	25	35	
3–5	40	30	
>5	30	20	12.34 (0.006)

Table 5 shows the correlation between daily social media duration and overall PSQI scores. A positive correlation ($r = 0.42$, $p < 0.001$) was observed, suggesting that higher social media use is associated with poorer sleep quality. This finding supports the notion that excessive social media engagement negatively affects sleep. The result is statistically significant and aligns with previous research on screen time and sleep disturbance.

Table 5: Correlation Between Daily Social Media Use and PSQI Global Score

Variable	r	p-value
Daily social media duration (hrs)	0.42	<0.001*

Discussion

The results of this research show that there is a considerable correlation between the strength of the social media use and lowering the quality of sleep in undergraduate nursing students. Namely, students with more hours of time on social media daily scored higher on global PSQI and larger in the poor quality of sleep category, which indicates that the length of screen time could negatively influence sleep quality. The findings are in line with prior research that indicated that regular use of social media could have a detrimental effect on sleep among population groups of students, who are already experiencing academic and clinical stress. [15]

The fact that social media use is positively related to poor sleep quality further confirms that excessive use of social media especially during the night and before going to sleep is related to a higher risk of having poor sleep quality. [13] The correlation seems to be universal among various populations of universities, and it can be inferred that the process of sleep disturbance under the influence of social media behavior can be a widespread occurrence. It is likely that nighttime use and more than one platform use lead to delayed bedtime and disturbed circadian rhythms. [16]

Other studies have found the same trends indicating that there is a positive correlation between poor sleep quality and the use of social media, but the degree of correlation may be different. The dissimilarity in sample characteristics, lifestyle habits, and measurement methods can explain the difference in the statistical significance of the findings. However, the general trend is that an increased social media use is usually linked to a worse quality of sleep. [17]

Regardless of these similarities, there are differences in the literature, with some studies reporting no substantial use of social media and sleep quality among specific groups of students. These variations could be determined by academic discipline, cultural norms or personal coping mechanisms. Such contradictions point to the difficulty of the behavioral

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

research and indicate that the impacts of social media on sleep may not be equally present across all groups of students. [6]

The lack of quality sleep is a frequent phenomenon in nursing students, and the extent of social media use is also elevated. Disrupted sleeping and extended social media use are patterns exhibited by many students, and it is imperative to acknowledge that health professional programs students might be at a higher risk because of academics and clinical workload. This supports the rationale of looking at digital habits as a determinant of sleep health. [18]

The pathways to poor sleep that mediate the use of social media comprise behavioral and physiological processes. Prolonged use during the night may cause the sleeping period to be shifted and the light on the screen may inhibit the formation of melatonin thus causing late onset of sleep. Those were the reasons of higher sleep latency, sleep disturbances, and daytime dysfunction that was witnessed in the sample of this study. [19]

Generally, the results of this research are added to the evidence that increased use of social media is associated with the deterioration of sleep quality among university students, including nursing students. [20] Although there is certain variation in different groups, the overall tendency provides the rationale of the necessity of the interventions aimed at fostering healthy digital practices, supporting sleep hygiene, and making students consider the impact of their media use on the overall wellness schemes.

Conclusion

The study concluded that excessive social media use among undergraduate GBSN nursing students is significantly associated with poorer sleep quality. Students who spent more time on social media, particularly in the evening or at night, experienced higher sleep latency, shorter sleep duration, and greater daytime dysfunction. Overall, nearly half of the participants demonstrated poor sleep quality, highlighting the impact of digital engagement on health and academic performance. These findings emphasize the importance of awareness regarding healthy social media habits to support optimal sleep and well-being among nursing students.

Recommendations

1. **Educational Interventions:** Nursing colleges should implement workshops or seminars to raise awareness about the effects of excessive social media use on sleep and overall health.
2. **Sleep Hygiene Promotion:** Students should be encouraged to adopt proper sleep hygiene practices, including limiting screen time before bedtime and maintaining consistent sleep schedules.
3. **Time Management Strategies:** Incorporating time management skills into the curriculum may help students balance academic responsibilities, social media use, and sleep.
4. **Policy Development:** Institutions could develop guidelines for responsible digital device usage, particularly in hostels or campus residences.
5. **Further Research:** Future studies could explore causal relationships, examine the impact of social media content types, and assess interventions designed to improve sleep quality among nursing students.

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ISSN: (e) 3007-1607 (p) 3007-1593

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