Journal of Institute of Medicine Nepal
Institute of Medicine, Kathmandu, Nepal

OPEN ACCESS

Original Article

JIOM Nepal. 2024 Aug;46(2):71-77.

Social Media Use and Quality of Sleep among Undergraduate Nursing Students in Kathmandu

Tilarupa Bhattarai, Radhika Upadhyay, Tulza KC, Bhawani Shahi, Muna Sharma

Author(s) affiliation

Maharajgunj Nursing Campus, Institute of Medicine, Kathmandu, Nepal

Corresponding author

Muna Sharma, MN, PhD
munasharma123@gmail.com

ABSTRACT

Introduction

Now-a-days, social media use has increased, which has its own benefits and limitations including its adverse effects on an individual's sleep. The objective of study was to find-out social media use patterns in terms of its addiction level and quality of sleep of nursing students.

Methods

Cross sectional design was used including 565 B.Sc. Nursing students at six nursing campuses in Kathmandu district. The data collection tool consisted of questions related to socio-demographic information; social media use behavior, Social Media Addiction Scale developed by Cengiz Şahin and Pittsburgh Sleep Quality Index, developed by Buysse. After taking administrative approval from the respective colleges and informed consents from the respondents, data was collected using self-administered questionnaires. Data was entered in SPSS Version 16 and analyzed using descriptive and inferential statistics.

Results

All respondents were female with mean age of 21.37 years; 72.9% of respondents had good quality of sleep, 59.5% had medium level addiction to social media. Social media addiction and poor sleep quality was found to have positive correlation ($r=0.51$, $p < 0.01$).

Conclusion

The nursing students were addicted to social media; and some of them had poor sleep quality. The quality of sleep wass correlated with social media use. It is recommended that the students need to decrease their social media use engagement.

Keywords

Internet addiction; nursing students; quality of sleep; social media addiction

DOI

10.59779/jiomnepal.1307

Submitted

May 11, 2024

Accepted

Jul 30, 2024

INTRODUCTION

Sleep is the food for brain. Sleep requirements depend upon age and activity level of individual. Normally, 7 to 9 hours of sleep is considered as optimum[1]. Prolonged sleep deprivation leads to severe physical, psychological and cognitive impairment and, eventually, death[2]. One of the factors affecting sleep is presence of media and its late night use.[3]

In Nepal, 24% of the population are active social media users[4]. Social media has both positive and negative effects. It helps in creating awareness and developing academic skills, on the other hand, social media use increases the risk of developing distorted body image, eating disorder [5], reduced academic performance[6] vulnerability for cyberbullying 7. Nighttime social media use is associated with poor sleep. Adolescents who are more emotionally connected to social media sites, feel upset and disconnected when they cannot use social media[8]. Fear of missing out results in using social media during work hours compromising work quality [9] which might be a very harmful habit for the future nurses. Similarly, a study has reported that social media addiction is associated with four times poorer sleep quality among nursing students.[10]

This study was conducted with the objective of identifying the association of social media use and quality of sleep among nursing students who will be the future nurses in the context of Nepal. The finding might be useful for students, their family members and academic institutions in regulating the use of social media by the student nurses.

METHODS

A cross sectional study design was used in this study. Six nursing colleges in Kathmandu were used as study settings. Students studying in B.Sc. Nursing (first, second, third and fourth year) program were the study population. Samples were selected using probability one stage cluster sampling techniques, where each college was considered as a cluster. Researchers applied systematic random sampling to select 6 nursing colleges from a list of 21 colleges with B.Sc. Nursing program in Kathmandu Metropolitan City. The K^{th} item was calculated by dividing total population (N) with sample size (n); N/n=2040/607 = 3.36^{th} .We selected every third and fourth nursing colleges from available nursing colleges. Among 610 samples 45 (7.3%) failed to return questionnaires. Thus, a total of 565 nursing students participated in this study.

Data was collected using self-administered questionnaires in the English language including questions related to socio-demographic information, social media use behavior, Social Media Addiction Scale (Cengiz Şahin[11]) and Pittsburgh Sleep Quality Index (Buysse et al[12]). Social Media addiction scale (SMAS) has internal consistency (Cronback's α) 0.93 consisting of 29 items with 5 points Likert scale. SMAS consists of four sub scales i.e. virtual tolerance, virtual communication, virtual problem and virtual information, which has no negative statements. The possible scores range from 29 to 145, where higher scores indicate higher level of social media dependence. The score of 29-51 indicates 'not addicted', followed by low level addicted (52-74), medium level addicted (75-97), high level addicted (98-120) and very high level addicted (121-145). Pittsburgh Sleep Quality Index (PSQI) scale has 10 major questions and other sub questions related to the sleep and sleeping behavior. The PSQI includes a scoring key for calculating a patient's seven sub scores, each of which can range from 0 to 3. A global score of 5 or more indicated poor sleep quality; the higher the score, the worse the quality. The internal consistency of SQI to is 0.70–0.83[13].

Before data collection, ethical clearance was obtained from Nepal Health Research Council (Ref. no.3099). The pretested questionnaire in English language was used for data collection. Written request letter was submitted to respective nursing campuses to get permission for data collection. In some nursing colleges, a separate ethical clearance process was required. The time for data collection was ascertained so that the researchers could meet the assembled students considering the class schedule and not disturbing their academic and clinical activities during their break hours at colleges and at the time of their shift change at clinical settings. The students in each college were explained the purpose and nature of the study. Anonymity and confidentiality of information and autonomy of participation were ensured. Written informed consent was obtained from each respondent. The data was collected from December 2021 to April 2022. The data was analyzed using SPSS Version 16. Data has been presented in frequency tables including, percentage, mean and standard deviation. Spearman Rank Correlation was used to assess the correlation of social media addiction and quality of sleep.

RESULTS

Out of 565 nursing students, all were female and all were using social media. The mean age was 21.37 years with ±1.73SD. Most (95.7%) of them were unmarried, more than two-third (67.8%) had permanent address outside Kathmandu valley. Majority (62.5%) were from Brahmin/Chhetri ethnic group and most (90.1%) of them followed Hinduism and 71.0% had siblings in their family. More than one third (40.5%) of respondents were living at their home with family.

Table 1. Health related characteristics of respondents (n=565)

Characteristics	Number (%)
Having Diagnosed Illness	
Yes	50 (8.8)
No	515 (91.2)
Type of Illness (n=50)	
Surgical (Appendicitis, Cholelithiasis)	8 (16.0)
Respiratory problem (Asthma)	4 (8.0)
Skin Problem (Eczema)	4 (8.0)
Anxiety	4 (8.0)
BPAD/ Mood Disorder	2 (4.0)
GI problem(Gastritis, peptic ulcer)	2 (4.0)
Thyroid Problem	4 (8.0)
Neurological (including seizure)	3 (6.0)
Migraine headache	2 (4.0)
Polycystic Ovary Disease	2 (4.0)
Others	3 (6.0)
Under Medication	
Yes	31 (5.5)
No	534 (94.5)
Habit of Taking Tea	
Yes	464 (82.1)
No	101 (17.9)
Day Time Nap	
Yes	266 (47.1)
No	299 (52.9)
Feel Stressed	
Never	12 (2.2)
Sometimes	490 (86.7)
Always	63 (11.2)

Table 2. Respondents' social media use in terms of sites, gadgets and duration (n=565) (n=565)

Characteristics	Number (%)
Types of Socia Media Used*	
Facebook	519(91.9)
Twitter	90(15.9)
Youtube	543(96.1)
Instagram	484 (85.7)
Viber	522 (92.4)
Messenger	517(91.5)
Whatsapp	352(37.5)
Tiktok	349(61.8)
Snapchat	30(5.3)
Duration of Use of Social Media	
Mean±SD=years	6.29±2.46
Types of Gadget used*	
Smartphone	564 (99.8)
Laptop	371(65.7)
Desktop	40 (7.1)
Tablet	46(8.1)
Preferred device*	
Smartphone	538 (95.2)
Laptop	106(18.8)
Desktop computer	5(0.9)
Tablet	12(2.1)
Daily use of Social Media duration	
< 1 hour	46 (8.2)
1-2 hr	119(21.1)
2-3 hr	142(25.1)
4-5 hr	68(12.0)
5-6 hr	108(19.1)
> 6hrs	82(14.5)
Median duration of social media use per day in hour (IQR)	3 (2-5)
Time of Increase Social Media Use	
Morning	33(5.8)
Day	45(8.0)
Evening	170(30.1)
Bed time	273(48.3)
Weekend	38(6.7)
Not regular time	6(1.0)

Table 1 shows that 8.8% of respondents had some form of diagnosed illnesses. Similarly, 5.5% of respondents were taking regular medications and 82.1% of respondents were in the habit of taking tea. Nearly half (47.1%) of respondents took daytime naps and 11.2% of respondents felt stressed always.

Table 2 reflects that the most commonly used social media sites were You tube (96.1%) followed by Viber (92.4%), Facebook (91.9%), and messenger

Table 3. Respondents' level of social media addiction (n=565)

Level of Addiction	Domain of Addiction				
	Virtual Tolerance	Virtual Communication	Virtual Problem	Virtual Information	Social Media Addiction
Not Addicted	31(5.5)	67(11.9)	171 (30.3)	6 (1.1)	12(2.1)
Low Level Addicted	108(19.1)	174(30.9)	207(36.6)	111(19.6)	160(28.3)
Medium Level Addicted	237(41.9)	282(49.8)	164(29.0)	282(49.8)	336(59.5)
High Level Addicted	148(26.2)	38(6.7)	21(3.7)	150(26.6)	51(9.0)
Very High Level Addicted	41(7.3)	4 (0.7)	2(0.4)	16(2.8)	6(1.1)

Table 4. Respondents' sleep quality in different components (n=565)

Components		Number (%)
Subjective Sleep Quality	Very Good	152 (26.9)
	Fairly Good	371 (65.7)
	Fairly Bad	35(6.2)
	Very Bad	7 (1.2)
Sleep Latency	Very Good	191 (33.8)
	Fairly Good	229(40.5)
	Fairly Bad	116 (20.5)
	Very Bad	29 (5.1)
Sleep Duration	> 7 hours	457 (80.9)
	6-7 hours	78 (13.8)
	5-6 hours	20 (3.5)
	< 5 hours	10 (1.8)
Sleep Efficiency	>85%	443 (78.4)
	75-84%	70 (12.4)
	65-74%	26 (4.6)
	<65%	26 (4.6)
Sleep Disturbances	Not during the past month	58 (10.3)
	Less than once a week	376 (66.5)
	Once or twice a week	128 (22.7)
	Three or more times a week	3 (0.5)
Use of Sleep Medication	Not during the past month	508 (89.9)
	Less than once a week	29 (5.1)
	Once or twice a week	23 (4.1)
	Three or more times a week	5 (0.9)
Daytime Dysfunction	No Problem at all	226 (40.0)
	Only a very slight problem	237 (41.9)
	Somewhat of a problem	83 (14.7)
	A very big problem	19 (3.4)

(91.5%). Almost all (99.8%) of respondents used smartphones and 95.2% preferred their smartphone for engaging in social media. One quarter (25.1%) of respondents said that they used social media 2-3 hours per day, 14.5% of respondents admitted that they used it more than 6 hours per day. The median duration of social media use per day was 3 hours (2, 5). Nearly half (48.3%) of respondents declared that their social media use increased at bedtime.

Table 3 indicates that more than one fourth (26.2%)

Table 5. Sleep quality of respondents (n=565)

Quality of Sleep	Number (%)	Mean Score	Obtained Score	Possible Score
Good (Score≤5)	412 (72.9)	4.60±2.57	0-15	0-15
Poor (Score >5)	153 (27.1)			

Table 6. Correlation between social media addiction and quality of sleep of respondents (n=565)

Scores	Global Sleep Score	Social Media Addiction Scale Score	P Value
Global Sleep Score	1.000	0.151**	<0.001
Social Media Addiction Scale Score	0.151**	1.000	<0.001

***Spearman's rho Correlation Coefficient, significant at the 0.01 level (2-tailed)*

of respondents were addicted at high level in the Virtual Tolerance domain, exactly the same proportion of respondents (49.8%) were addicted at medium level in Virtual Communication and Virtual Information both domains. Similarly, more than one third (36.6%) of respondents were addicted at a low level in the Virtual Problem domain. In total, the majority (59.5%) respondents had medium level addiction to social media, where 1.1% had a very high level of addiction.

Table 4 shows that 65.7% of respondents categorized their own sleep as fairly good, nearly one-third (33.8%) of respondents' sleep latency was very good. Most of the respondents (80.9%) slept for more than 7 hours per night, nearly equal (78.4%) respondents' sleep efficiency was more than 85%, and the majority (66.5%) respondents had experienced sleep problems less than once a week. Most (89.9%) had never used sleep medication for sleep, daytime dysfunction as a very big problem was found in 3.4% of respondents in the past month.

Table 5 indicates that the majority (72.9%) of respondents had good quality of sleep.

Table 6 shows that the result of Spearman's rho correlation of social media addiction and sleep quality score of respondents was found to be positive at low level and statistically significant ($r=0.51$, $p < 0.01$).

DISCUSSION

Among 565 respondents, 8.8% were having medical problems and taking some medication (5.5%) for their problem. Majority (82.1%) of them were in the habit of drinking tea or coffee; however, the frequency was ≥3 times a day only in 16.2% of students. Nearly half (47.1%) of them used to take daytime naps. As the data was collected amidst of COVID 19 pandemic and most of the students' routine was disturbed, that may have contributed to the higher respondents having day time naps and drinking tea. Significant numbers (11.2%) of respondents reported that they always felt stress. A study from India has reported that 1% of nursing students experienced extremely severe stress and 27.6% experienced moderate levels of stress [14].

The most commonly used social media sites by respondents was YouTube (96.1%) followed by Viber (92.4%), Facebook (91.9%), messenger (91.5%). Consistent to the finding Giordano & Giordano[15] have also reported that Facebook was the most commonly used social media sites. In the present study, one quarter (25.1%) of respondents said that they used social media 2-3 hours per day, 14.5% of respondents admitted that they used it more than 6 hours per day. The median duration of social media use per day was 3 hours. According to a study from India[16] , the nursing students' mean hours of internet usage of the internet was 2.17 hours (SD=1.85). This shows that the nursing students in present study spent slightly greater time in using social media than the Indian Nursing Students . However, a study from Turkey[17] among the similar population has reported the daily average time for social media use of the students as 3.70±2.34, which is slightly higher than that in the present study. Moreover, according to an Iranian study[18], the reported social media use duration was greater than that in the present study as it has revealed that the average time of all Smart devices used was 7.5±4.4 hours per day. Nearly half (48.3%) of respondents declared that their social media use increased at bedtime. A study from Saudi Arabia has reported a greater proportion (90.4%) of University students used social media at bedtime [19]. Present study showed that the mean scores of respondents in virtual tolerance, communication, problem and information were 14.95, 25.41, 22.25 and 18.41 respectively. A similar study among nursing students from Malaysia has reported slightly higher mean score in virtual tolerance (17.35 vs 14.94) and virtual information domain (20.69 vs 18.41), nearly equal in virtual communication (25.41 vs 25.23) and virtual problem (22.25 vs 23.13) domains[19]. In the present study, the mean percentage of respondents was highest in the Virtual information domain (61.3%) and lowest in the virtual problem domain (45.4%). The finding indicates that the respondents of this study are comparatively dependent on social media more for information.

Present study has revealed that more than one fourth (26.2%) of respondents were addicted at high level in the Virtual Tolerance domain, exactly the same proportion of respondents (49.8%) were addicted at medium level in Virtual Communication and Virtual Information both domains. Similarly, more than one third (36.6%) of respondents were addicted at a low level in the Virtual Problem domain. In total, the majority (59.5%) respondents had medium level addiction to social media, where 1.1% had a very high level of addiction. A study from Egypt has reported higher prevalence (6.76%) of severe social media addiction[20] than in the present study, though the tools used to assess social media addiction were not the same in two studies.

Regarding sleep, the majority (65.7%) of respondents of this study categorized their own sleep as fairly good, only 52% of the non nursing students of a study from Egypt [22] rated it as fairly good. Similarly one-third (33.8%) of respondents' sleep latency was very good in the present study and 78.4% of respondents' sleep efficiency was more than 85%, whereas, Masoed et. al[22] has indicated only 51.5% of students were having sleep efficacy more than 85%. In the present study, the majority (66.5%) of respondents had experienced

sleep problems less than once a week. Contrary to this, Masoed et. al[22] has reported that 19.7% of respondents had sleep problems ≥ 3 times a week. The same study has revealed that 22.8% of respondents had to use sleep medication ≥ 3 times a week and 23.4% had experienced daytime dysfunction due to sleep problems. Contrary to this present study has revealed that most (89.9%) of the respondents had never used sleep medication for sleep, daytime dysfunction as a very big problem was found only in 3.4% of respondents. Majority (72.9%) of respondents had good quality of sleep, but again only 18.4% of the respondents from a study had good sleep quality, remaining 81.6% had poor sleep quality.[23]

There is an increased chance to have poor sleep quality among the students who have social media addiction, The result of Spearman's correlation of social media addiction and sleep quality of respondents was found to be positive and statistically significant ($r=0.15$, $p < 0.01$). This finding is supported by other studies too where the $r = 0.2$, $p=<0.001$[24], $r=0.440$, $p=0.000$[25].

CONCLUSION

The study finding concludes that the nursing students had moderate levels of social media addiction. Most of the student nurses' sleep quality was good, however, some of them had poor sleep quality too. The quality of sleep and social media were correlated with each other.

It is recommended that the nursing students need to decrease their social media use pattern. Similarly, the academic organization and the family of the students need to monitor the students' social media use behavior.

ACKNOWLEDGEMENT

The researchers are grateful to University Grant Commission Nepal for providing a grant to conduct this study, the administrative heads of research sites and the participants for their cooperation for successful completion of study.

FINANCIAL SUPPORT

The research was funded by University Grants Commission Nepal.

CONFLICT OF INTEREST

The author(s) declare that they do not have any conflicts of interest with respect to the research, authorship, and/or publication of this article.

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