

IMPACT OF SOCIAL MEDIA ON SLEEP PATTERNS, ACADEMIC PROGRESS AND MENTAL HEALTH AMONG MEDICAL STUDENTS AT SUPERIOR UNIVERSITY LAHORE, PAKISTAN: A CROSS SECTIONAL STUDY

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Abstract

Background:

There is a growing concern regarding the negative effects that social media can have on people's sleep, academic performance, and mental health due on the increased use of social media by a large number of medical students throughout the world. The purpose of this study was to investigate the links between these factors for Pakistani medical students at Superior University Lahore. **Objective:** To determine the relationship between the amounts of time spent using social media and the amount of sleep that medical students receive. To determine how social media influences sleep and therefore, how sleep affects both the academic performance and mental health of medical students.

Methodology:

A total of 260 medical students were surveyed using a convenience sample for a descriptive, cross-sectional study. A structured online questionnaire was designed and used to collect data regarding the frequency and type of use of social media, the total time and quality of sleep, an individual's perceived impact of social media use on his/her academic performance, and several other factors related to the individual's mental health. A statistical analysis of the data was performed using SPSS v. 27 with descriptive statistics and a Pearson correlation.

Results:

indicated that social network sites (SN) usage contributes to poor sleep quality, significantly ($p=0.034$), which suggests a negative impact of increasing amounts of time spent on SNs when they are used at night. Also, no statistically significant associations were noted between students' social networking site (SNS) use and their grade point averages (GPA) when using the Cohen approach ($p=0.935$) or mental health status ($p=0.657$). Descriptive statistics indicated that there were significantly more females in the sample than males, and the majority of the sample was aged 19-26, indicating a higher level of social network engagement within this

particular age group.

Conclusion:

Social networking sites (SNS) are negatively impacting the level of quality of sleep that medical students experience through excessive use of social networking sites, specifically immediately preceding their bedtime, and this may lead to fatigue among medical students. However, there is no clear support to indicate that the excessive use of social network sites is detrimental to medical students' academic success or to their mental health. It will be helpful if educational institutions promote digital hygiene among their students in order to create a culture of increased awareness of the importance of limiting screen time for their overall health and academic success.

INTRODUCTION

With the widespread use of smartphones and the necessity of having one in contemporary living, there is an urgent need to understand the causes of smartphone addiction, especially in stressful education. This study examines the frequency and causes of smartphone addiction among Pakistani undergraduate medical students. In specific, the present paper will examine the relationship among impulsivity, stress, social pressures, and smartphone addiction(1). Because of their stressful academic life and the pressure of studying, medical students often have issues with sleep disorders and maladapted behavior patterns, including problematic smartphone usage and nomophobia. This study was aimed at evaluating the prevalence of poor sleep quality among the medical students at Kermanshah University of Medical Sciences in the West of Iran, contributing factors, and the relationship between nomophobia and poor sleep quality. Focusing on this population, we would like to attract the attention to the specific challenges that medical students struggle with their sleep (2). Due to such seclusion, stress and anxiety can deteriorate; this may eventually affect the duration and quality of sleep. With social pressure and academic requirements being strongly interwoven in Lahore, it is important to understand the influence of social media on these dynamics. Based on previous studies examining the multidimensional impact of motherhood and social life on resilience, the implications extend past academic success to broader consequences of mental

health and overall wellness (3). The use of social media in medical students is increasingly becoming the norm and it is significantly influencing their lives and activities. Peer connection and sharing of academic resources and discussing assignments is often done through social media platforms such as Facebook, Instagram, and Snapchat. This frequent exposure can lead to increased screen time that has been associated with disturbed sleep patterns in various studies(4). This comes in particularly when dealing with medical students. Medical training is characterized by lengthy study hours, competition and an intense academic load. These factors amplify mental torment in a combination with the use of social media. People who used social media heavily at late hours were also found to report to have more anxiety and poorer subjective sleep compared to those who used it less (5). The phenomenon of the so-called fear of missing out (FOMO) that fuels the desire to maintain unceasing contact with social media has also been studied by numerous researchers. Young people spend most of their time glued to the internet late at night, keeping abreast of what their peers are doing, what is trending, or what is happening in their learning institutions, disorganizing their sleeping patterns. FOMO raises mental activity before bedtime and encourages obsessive checking habits, and people are more likely unable to cease using digital devices. FOMO may exacerbate sleep deprivation among medical students who are already under strain due to heavy academic

workloads and stress which has a negative effect on their overall wellbeing, emotional regulation and capacity to think(6). Another issue, which is gaining increased acceptance in the medical student's community and among early-career physicians, is burnout, which can be aggravated by the long-term effects of sleep deprivation (7). The reward loop created by social media demonstrates the latter by encouraging users to use it later during the night, and this means that users stay awake longer and this reduces the quality of sleep(8). Faculty members can be employed to play a critical role by transforming the medical curriculum to incorporate dialogue on mental health and modeling good digital behavior. Universities should also consider the on campus counseling and digital detox programs to adequately help students overcome the screen dependency (9). The medical students are particularly vulnerable as they have rigorous coursework, lengthy study hours, and high levels of stress. Overuse of social media and smartphones at night is linked to delayed sleep onset, shorter sleep duration, and lower subjective sleep quality factors that affect clinical learning, memory consolidation, and attention. These effects in student populations are frequently documented using tools like the Pittsburgh Sleep Quality Index (PSQI) (10). Beyond academics and cognition, social media-related mental health issues are widely known. Increased symptoms of depression, anxiety, loneliness, and psychological distress in young adults and student cohorts are linked to problematic social media use, according to systematic reviews and meta-analyses. Social comparison, cyberbullying, decreased in-person social support, and sleep disturbance which is a risk factor for mood disorders are some of the mechanisms put forth. Medical students are a crucial target for research and intervention since they already exhibit higher rates of anxiety and depression than the general population(11). Recently, there has been a significant increase in the use of light-emitting electronic devices for communication, entertainment, and reading. We discovered that using these devices before bed lengthens the time it takes to fall asleep, slows down the circadian rhythm, suppresses melatonin levels, decreases the quantity and timing of REM sleep, and lowers alertness the next morning. When people use light-emitting devices right before bed, they become more alert,

which may cause them to put off going to bed at home. Overall, we discovered that using portable light-emitting devices right before bed has biological effects that could prolong sleep deprivation and interfere with circadian rhythms, both of which can negatively affect performance, safety, and health (12).

Material and Methods:

In order to determine how social media use is related to academic performance, quality of sleep, and mental health, this cross-sectional descriptive study was conducted with the medical students attending **Superior University in Lahore, Pakistan**. 360 students were sampled from an overall population of 4900 by applying Yamane's method using a 5.07% margin of error with a confidence interval of 95%. 18–30-year-olds who used social media at least once per day were included in the study, while participants with known sleep disorders or a history of psychiatric illness were not included. Information regarding demographic information, social media usage, sleep patterns, academic status, and mental health variables was collected through an online structured self-administered questionnaire via Google Forms. The questionnaire included five sections using Descriptive Statistics and Likert-type answers. The variables measured in the study included how long students use social media each day, how often they use social media, and what time of day they are on social media. Additionally, sleep quality/duration was determined, as well as GPA and how much stress, anxiety, and fear of missing out (FOMO) students self-reported. Data analysis with SPSS (v. 27) includes a combination of descriptive statistics, correlation, and regression. Ethical approval for the research was obtained, and all efforts to maintain confidentiality, anonymity, and voluntary participation were exercised during the process of conducting the study. All data collected, analysed and reported in this study were stored securely and treated with integrity and respect to participant privacy.

Result:

Out of a sample of 360 medical students, a total of 206 responses met criteria for validity and were included. Descriptive statistics including frequencies, means, and standard deviations were used to

summarize the results from 5 categories: demographic characteristics, social media habits, effects on sleeping habits, effects on academic

achievement, and effects on mental health. Graphs and tables were used to illustrate key correlations and trends identified in the study.

Statistics

TABLE 4.1 Descriptive Statistics of Demographic, Sleep, and Sleep Media Variables (N = 206)

		Gender	Age	Semester	Program	Residence
N	Valid	206	206	206	206	206
	Missing	0	0	0	0	0
mean		1.6214	2.3835	3.9854	2.1699	1.5146
Median		2.0000	2.0000	4.0000	2.0000	2.0000
Mode		2.00	2.00	4.00	3.00	2.00
Std. Deviation		.48623	.57043	1.16652	1.02423	.50101
Variance		.236	.325	1.361	1.049	.251

Statistics					
Sleephours	smfrequency	smhours	smtime	smnightcheck	
206	206	206	206	206	
0	0	0	0	0	
3.2476	3.3738	2.3641	3.2524	3.4078	
3.0000	3.0000	2.0000	3.0000	4.0000	
3.00	3.00	3.00	3.00	4.00	
1.06467	1.84552	.77047	.65098	.91531	
1.134	3.406	.594	.424	.838	
smvsacadem ics	smanxiety	smcompariso n	smmoodneg ative	smfocusdiffic ulty	smconnected
206	206	206	206	206	206
0	0	0	0	0	0
3.2524	3.2816	3.2961	3.5097	3.5583	3.5049
3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
3.00	3.00	3.00	3.00	3.00	3.00
1.00940	1.12980	1.22362	1.09874	1.13654	1.03945
1.019	1.276	1.497	1.207	1.292	1.080

nightwakeups m	sleepreductio n	smtiredness	smaffectslee p	smacadimpa ct	smdistractio n	smacademict ime
206	206	206	206	206	206	206
0	0	0	0	0	0	0
1.5777	1.2767	2.4660	1.1748	3.2961	3.1311	3.1602
2.0000	1.0000	2.0000	1.0000	3.0000	3.0000	3.0000
2.00	1.00	2.00	1.00	3.00	3.00	3.00
.49513	.44846	.84756	.38068	.99004	.95115	.99195
.245	.201	.718	.145	.980	.905	.984

Table 4.1 shows that 206 valid students gave descriptive statistics regarding their years of study (mean = 3.99), bedtimes on an average night (mean = 1.51) which were not consistent; social media use (range = 1.17-3.56) varied considerably. The results suggest that there are different sleeping patterns on average, and social

media's impact on a student's academic and overall well-being is evident.

Demographic Characteristics Of Respondents

The current study involved 206 medical students in total. Age, gender, year of study, and residential status (living at home or in a dorm) were all included in the participants' demographic profile.

To guarantee a thorough comprehension of the sample characteristics and to enable significant subgroup analyses, these demographic factors were gathered. The examination of possible correlations

between demographic characteristics and the relevant outcomes was also made possible by the inclusion of these variables.

2Table4.2 Distribution of study participants according to gender (N = 206)

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	78	37.9	37.9	37.9
	Female	128	62.1	62.1	100.0
	Total	206	100.0	100.0	

Table 4.2 presents a total of 206 individuals who responded to this study, with a composition of 128 (62.1%) female and 78 (37.9%) male. All of the data collected for this study is considered complete as the total number of responses received equal 100%. The

higher percentage of females responding to this survey may represent the typical gender ratio in many medical schools and could also affect the results of the research regarding academic perception, stress, and/or lifestyle.

3Table 4.2.1 Distribution of Respondents by Age Group
Age

Frequency	Percent	Valid Percent	Cumulative Percent
15-18 yrs.	3	1.5	1.5
19-22 yrs.	127	61.7	63.1
23-26yrs	70	34.0	97.1
27-30 yrs.	6	2.9	100.0
Total	206	100.0	

In this table 4.2.1 among the 206 individuals surveyed, the dominant age category is the 19- 22-year bracket, making up roughly sixty-two percent of the sample. The next largest group is those aged 23-26, which accounts for about thirty-four percent. A very small fraction, about one and a half

percent, are in the 15-18 year range, while only six respondents around three percent are aged 27-30. The cumulative pattern shows that nearly all participants fall between 19 and 26 years old, with the 27-30 age group representing the tail of the distribution.

4Table 4.2.2 Academic Semester of Respondents

Frequency	Percent	Valid Percent	Cumulative Percent
4th	11	5.3	5.3
5th	24	11.7	17.0
6th	3	1.5	18.4

7th	87	42.2	42.2	60.7
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According to Table 4.2.2, the majority of participants were senior-level students (7th semester = 42.2%; 8th semester = 39.3%). The participants' advanced academic and clinical experience likely increased the understanding of the study's importance. The lack of

participants from earlier semesters is likely due to less research knowledge, resulting in shallower responses to the survey.

8th	81	39.3	39.3	100.0
Total	206	100.0	100.0	

5Table 4.2.3 Academic Programs of Respondents

Frequency			Percent	Valid Percent	Cumulative Percent
Operation Theater	76		36.9	36.9	36.9
Anesthesia Technology	36		17.5	17.5	54.4
Public Health	77		37.4	37.4	91.7
Sports Science	17		8.3	8.3	100.0
Total	206		100.0	100.0	

Program 32

According to Table 4.2.3, the largest number of respondents were from the Public Health Program with 37.4% of the total responses, followed by the Operation Theatre Technology program with 36.9% of the total responses. Together, these two groups

represent the majority of the responses received in the survey and indicate a much higher level of participation by these discipline than the other disciplines in the survey which had far fewer respondents and therefore lower volume of responses.

6Table 4.2.4 Residence Status of Respondents

Residence

Frequency			Percent	Valid Percent	Cumulative Percent
Valid	Hostel	100	48.5	48.5	48.5
	Home	106	51.5	51.5	100.0
	Total	206	100.0	100.0	

Table 4.2.4 displays respondents' living situations. The respondents living at home and the

respondents living in hostel accommodation are almost evenly distributed at 51.5% and 48.5%,

respectively. The equal numbers of respondents indicates that there is sufficient variation in residential living conditions of the students, such that the students will be able to provide comments

related to different environments, and these environments are likely to impact their study habits, social engagement, or overall academic involvement.

Regression

Time Spent On Social Media

The findings revealed that social media use is highly prevalent among participants.

7Table 4.3.1 Regression Analysis of Social Media Use Predicting Sleep Quality
Anova

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.383	1	.383	4.581	.034 ^b
	Residual	17.059	204	.084		
	Total	17.442	205			

Dependent Variable: mean sleep

Predictors:(constant) mean social.

The regression analysis in Table 4.3.1 describes the relationship between general social media consumption (mean social) and overall sleep quality (mean sleep). When no use is present, sleep quality is predicted to be 1.793 ($p = 0.000$). The increase of 1 unit of social media consumption (mean social)

predicts that sleep quality will decrease by 0.063 ($p = 0.034$, $\beta = .148$), which represents a small yet significant negative effect on sleep. A high level of social media consumption (mean social) closely relates to lower levels of overall sleep quality, however it is only moderate in strength

Analysis For The Effect Of Social Media Use On Sleep Quality

8Table 4.3.2 Coefficients of Regression Analysis for the Effect of Social Media Use on Sleep Quality

Coefficients^a

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.
1	(Constant)	1.793	.090		19.939	.000
	mean social	.063	.029	.148	2.140	.034

Dependent Variable: mean sleep

In Table 4.3.2, a regression analysis was performed to examine whether it is possible to reliably predict how well an individual sleeps based on their average usage of social media. When there is no social media usage,

the prediction for the sleep score would be 1.793 ($p < .001$). For each additional unit of social media usage per day, an individual will experience an increase in their level of disturbance to their sleep of

0.063 ($p = .034$, $\beta = .148$). This is considered to be a small (.148) but statistically significant negative effect on an individual's sleep quality as a result of their increase in social media use. The t -value of 2.140 indicates that the social media usage variable is

statistically significant. Overall, when looking at social media usage against sleep quality, we can see that there is a modestly negative relationship between them.

Analysis Of Variance Showing The Overall Model Fit Between Social Media Usage And Academic Performance

9Table 4.3.3 Analysis of variance showing the overall model fit between social media usage academic performance.

ANOVA^a

	Model	Sum of Squares	Do	Mean Square	F	Sig.
1	Regression	.003	1	.003	.007	.935 ^b
	Residual	96.104	204	.471		
	Total	96.107	205			

Dependent Variable: Meana

Predictors: (Constant), mean social

In table 4.3.3 and the analysis of variance from the regression results on the correlation between social media use and academic success, the data indicates that the regression/sum of squares (SS) for social media use = 0.003 (degrees of freedom (df = 1), mean square = 0.003, F-value (F) = 0.007, p-value (p) =

0.935 = no statistical significance). Furthermore, the remaining unexplained variance for the academic performance SS (i.e., residual) = 96.104 (df = 204), suggesting that social media use does not provide enough information to predict the academic performance of this group.

Coefficients Illustrating The Relationship Between Social Media Usage And Academic Performance

10Table 4.4 Coefficients illustrate the relationship between social media usage and academic performance.

Coefficients^a

	Model	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
1	(Constant)	3.193	.213		14.959	.000
	mean social	.006	.069	.006	.082	.935

Dependent Variable: meanAP

In table 4.4 a regression analysis was performed to assess how social media affects students' average academic performance (Average AP). The predicted result of average academic performance when using

social media with a score of zero was an average score of 3.193 ($p < .001$) and the Coefficient for social media is .006 ($p = .935$; $\beta = .006$), which indicates a very weak, not significant effect. Additionally, a t -

value of.082 establishes that social media is not a sample.
strong predictor of academic performance in this

AnalysisOf Varaiance Testing The Relationship Between Social Media Usage And Mental Health Status

11Table 4.5 Analysis of variance evaluating the relationship between social media usage and mental health status.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.091	1	.091	.198	.657 ^b
	Residual	93.523	204	.458		
	Total	93.613	205			

Dependent Variable: meanMentalH

Predictors: (Constant), meansocial

In table 4.5 analysis of variance (ANOVA) for regression was conducted to examine the association between the use of social media and mental health. The regression sum of squares was 0.091 (df = 1), the mean square was 0.091, the F statistic value was 0.198 (p = 0.657) indicating that the association is not statistically significant. The

residual sum of squares was 93.523 (df = 204) indicating that the majority of the variability in mental health is due to other factors not included in the analysis. Therefore, the use of social media did not appear to have a statistically significant effect on mental health among the participants.

Analysis Of Variance Testing The Relationship Between Social Media Usage And Mental Health Status

12 Table 4.6 Analysis of variance evaluating the relationship between social media usage and mental health status.

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
	(Constant)	3.521		16.725	.000
	mean social	-.030	-.031	-.445	.657

Dependent Variable: meanMentalH

In referencing Table 4.6, this analysis seeks to determine if social media usage (mean Social) serves as a predictor of scores from participants as it pertains to their state of mental health (mean MentalH). Based on the data provided by this model, we conclude that F = 0.198 and p = 0.657, indicating a lack of statistical significance . The Regression Sum

of Squares (SS) is equal to 0.091 and Residual SS = 93.523 thus indicating to us that social media usage will appear to explain little or nothing regarding the variability in mental health. The results of this study indicate that social media activity has little to no positive effect on participants' mental health.

Summary of findings

A study involving 206 participants found that while there is a statistically important negative relationship between the amount of time spent using social media and the quality of sleep ($B = .063$; $\beta = .148$; $p = .034$), there was no statistically important relationship between the amount of time spent using social media and their ability to perform academically ($p = .935$) or mentally ($p = .657$). Therefore, it can be concluded that although increased social media usage will negatively affect sleep; it will not have any other impact.

Discussion

The Superior University Lahore researched how social media impacts the quality of sleep, academic performance, and psychological well-being for those completing medical degrees as compared to other college students. The researchers concluded through their findings that greater amounts of time spent on social media negatively impacted the quality of sleep. A line of evidence supporting this conclusion was shown with the use of a calculation as a statistical analysis, whereby the authors used a correlation statistic (where $B = 0.063$ and $p = 0.034$) to indicate the negative relationship between time spent on social media and quality of sleep(13). In other words, social media users reported that they experienced more interruptions in their sleeping pattern from using social media late at night than non-users did. This conclusion aligns with past research that demonstrated that screen exposure (such as via computer screens) and cognitive activity (from using social media) cause interruptions in the sleeping patterns for students who have a high workload of studies and clinical work. Social media use was not found to be significantly related to academic performance ($p = 0.935$) or mental health issues ($p = 0.657$), which suggests that medical students, especially those who are in their last year of college, are using social media more intentionally, rather than in a casual or social manner(14). Additionally, the demographic breakdown of the sample included a significant amount of women and seniors and an equal amount of both proportions of residents, which also supports the implication for the context of these findings, demonstrating that students in medical

school have acquired the resilience and adaptability to cope with the effects of social media.

Conclusion

Along with providing numerous insights regarding increased emphasis on digital hygiene, increased awareness of sleep, and enhanced time management technique the research also identified some limitations regarding the current research. One major limitation being that the current research was conducted at a single university; therefore, it has a small enough sample size that we cannot generalize it to other universities. Furthermore, additional research using a longitudinal or mixed-methods design could be conducted in order to obtain a more extensive view regarding how social media impacts student well-being, as it relates to multiple universities.

REFERENCES

1. Sarhan AL. The relationship of smartphone addiction with depression, anxiety, and stress among medical students. *SAGE Open Med.* 2024;12:20503121241227367.
2. Sadeghi N, Rezaeian S, Janatolmakan M, Mohammadi MM, Heidarian P, Khatony A. The relationship between sleep quality and nomophobia among medical students. *BMC Med Educ.* 2025;25(1):1246.
3. Shahzad W, Hanif R, Haroon R. The impact of social media addiction on self-esteem, attention span, sleep quality and phubbing behavior. *Pak J Humanit Soc Sci.* 2024;12(2):2148–56.
4. Mohammadbeigi A, Absari R, Valizadeh F, Saadati M, Sharifimoghdam S, Ahmadi A, et al. Sleep quality in medical students; the impact of over-use of mobile cellphone and social networks. *J Res Health Sci.* 2016;16(1):46.
5. Abdulsalim S, Anaam MS, Farooqui M, Alshammari MS, Alfadly S, Alolayan J, et al. Evaluation of social media addiction and its relationship with anxiety and academic performance among medical and non-medical students: A cross-sectional study from Saudi Arabia. In: *Healthcare.* MDPI; 2025. p. 295.

6. Przybylski AK, Murayama K, DeHaan CR, Gladwell V. Motivational, emotional, and behavioral correlates of fear of missing out. *Comput Hum Behav.* 2013;29(4):1841-8.
7. Abbas K, Usmani N, Habib S, Mustafa M, Alam M, Kausar S, et al. Impact of social media use on sleep quality and its effect on mental and physical well-being of graduate research scholars. *Discov Public Health.* 2025;22(1):520.
8. Hammad MA, Alyami MHF, Awed HS. The association between internet addiction and sleep quality among medical students in Saudi Arabia. *Ann Med.* 2024;56(1):2307502.
9. Engel E, Gell S, Heiss R, Karsay K. Social media influencers and adolescents' health: A scoping review of the research field. *Soc Sci Med.* 2024;340:116387.
10. Cain N, Gradisar M. Electronic media use and sleep in school-aged children and adolescents: A review. *Sleep Med.* 2010;11(8):735-42.
11. Hirshkowitz M, Whiton K, Albert SM, Alessi C, Bruni O, DonCarlos L, et al. National Sleep Foundation's sleep time duration recommendations: methodology and results summary. *Sleep Health.* 2015;1(1):40-3.
12. Dinklo ND, Schermer MH, Bolt I, M'hamdi HI. Creating a Basic Ethical Framework for Digital Lifestyle Interventions: A Narrative Review. *Mayo Clin Proc Digit Health.* 2025;100295.
13. Levenson JC, Shensa A, Sidani JE, Colditz JB, Primack BA. The association between social media use and sleep disturbance among young adults. *Prev Med.* 2016;85:36-41.
14. Cain N, Gradisar M. Electronic media use and sleep in school-aged children and adolescents: A review. *Sleep Med.* 2010;11(8):735-42.