

Impact of Social Media on Quality of Sleep Among Homoeopathic Medical Students: A Cross Sectional Study

Dr. Justina M. Steefan¹, Dr Siddesha G², P. Keerthi³, Medishetty Pavani⁴,
L.Kiran Kumar⁵, A. Srilekha⁶, G. Sindhu⁷, S. Sushma Reddy⁸

^{1,2}Assistant Professor, Department of Psychiatry, MNR Homoeopathic Medical College & Hospital Sangareddy, Telangana, 502294

^{3,4,5,6,7,8}Intern, MNR Homoeopathic Medical College & Hospital, Sangareddy, Telangana, 502294

Corresponding Author: Dr. Justina M. Steefan

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ABSTRACT

Need of the study: One of the growing and unavoidable issue among students is inadequate sleep. Students may experience sleep disturbances due to variety of circumstances, with prolonged social media use before bed being one of them.

Objectives: The purpose of the study is to investigate the association of social media with quality of sleep among students.

Method: 304 Homoeopathic medical students responded to the online survey, out of which 213 responses were included in statistical analysis. Pittsburgh Sleep Quality Index (PSQI) scale was used for sleep quality assessment.

Results: The purpose of this study was to examine the usage of social media and its impact on sleep quality. In this study, participants are students of MNR Homeopathic Medical College of age group 18-26. The regression analysis was done. $R^2 = 0.0344$, $F(1,211) = 7.528$, $p = 0.0065$ ($p < 0.05$), which shows a statistical relationship between hours spent on social media and sleep quality.

Keywords: Social media, sleep quality, PSQI SCALE.

INTRODUCTION

Social media, a form of communication that is based on the internet,¹a collective term for various websites and applications, mainly focusing on communication, interaction,

community-based input, sharing of content, and collaboration. In our daily lives social media works like an important pillar for many people, and it has become a part of our routine life activity, like two sides of a coin, social media has both positive sides like sharing thoughts, feeling, gaining knowledge, social support from people helps in providing connection, news, and endless entertainment. Negative side like being addicted, trouble in falling asleep, lack of good sound sleep. so high risk of developing mental health problems like depression /anxiety /insomnia.²

Sleep is a natural periodic state of rest for mind and body with partial absence or totally blunt voluntary movements and subjective experience. An average of 6 to 7 hours of sleep is needed for adults. Good sound sleep can cause many physiological changes like decrease in plasma volume, respiratory rate, heart rate, blood pressure (systolic bp falls to 90- 110mm of hg, lowest level reached at 4th hour after sleep, and it remains constant. So excess use of social media may cause less time of sleep which may affect above changes.³

Sleep generally occurs because of sleep centers in brain i.e., raphe nucleus, locus coeruleus and by suprachiasmatic nucleus acts like circadian pacemaker in response to daylight and darkness via retino-

hypothalamic fibers⁴ by regulating melatonin secretion.^{5,6,7} Checking /browsing social media at night can affect sleep by the stimulating effects of lights emitted from screens by interfering with our circadian rhythms.

Studies\pools have shown that browsing social media is most common pre sleep activity before going to bed. Our study aims to evaluate the effects of social media on young adults and its impact on quality of sleep by using standardized Pittsburgh Sleep Quality Index Scale. [PSQI] to measure quality of sleep and to discriminate between individuals who experience poor sleep verses, individual who sleep well.

MATERIALS AND METHODS

APPROACH

A Cross sectional study is conducted after ethical clearance, and informed consent to analyze and evaluate usage of social media and its impact on quality of sleep.

INCLUSION CRITERIA:

Students of MNR Homeopathic Medical College.
Both Genders.

EXCLUSION CRITERIA:

Students who are not willing to participate in study.
Age group less than 18 and more than 26.

Students with a history of using any medications for sleep.
Students with prior diagnosed with sleep disorders.

MATERIALS USED:

Questionnaire is formulated by using Pittsburgh Sleep Quality Index Scale {PSQI} in google forms to know the influence of social media on quality of sleep.

The questionnaire is circulated among students through google forms via online, and data is collected for 1 month period. The questionnaire assessed the following variables: age, time spent on social media [hours], most frequently use social networking site, purpose for which social media used, sleep durations etc

304 Homoeopathic medical students responded to the online survey, out of which 213 responses were included in statistical analysis.91 responses were excluded due incomplete data.

Statistical Methods

Descriptive statistics such as mean and standard deviation were used to characterize the data obtained. Regression statistics was conducted to examine the relationship between hours spent on social media and sleep quality.

RESULTS

Figure 1



Figure 2

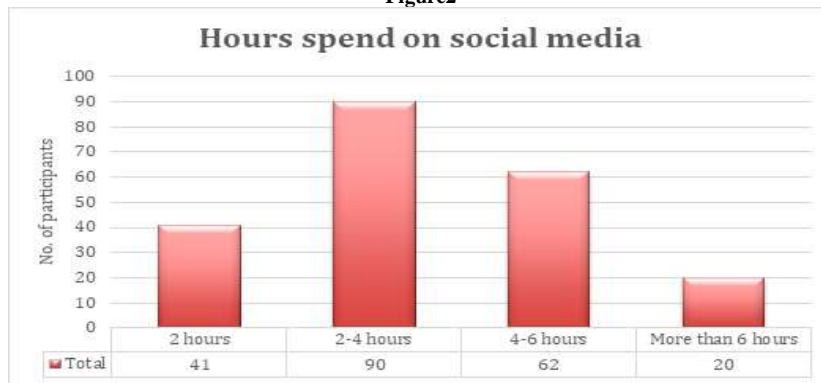


Figure 3

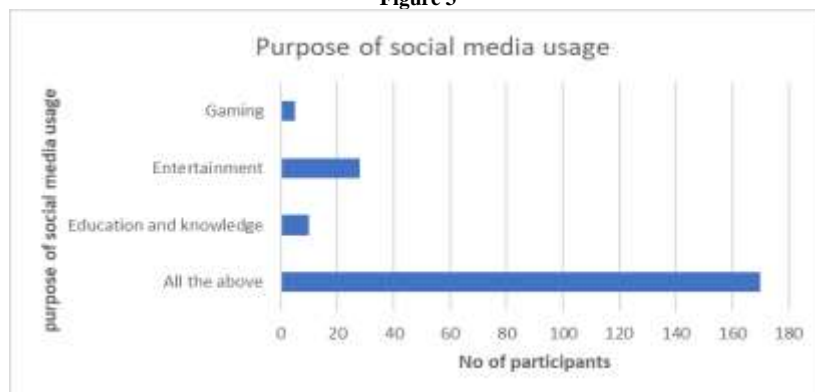


Figure 4

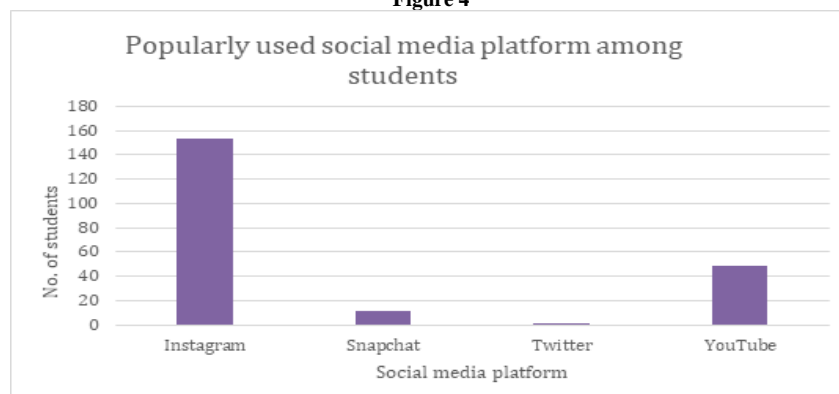


Figure 5

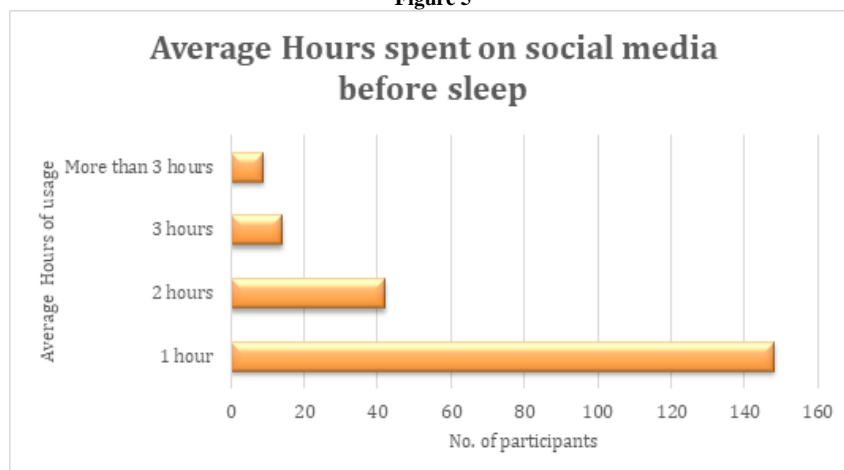


Figure 6

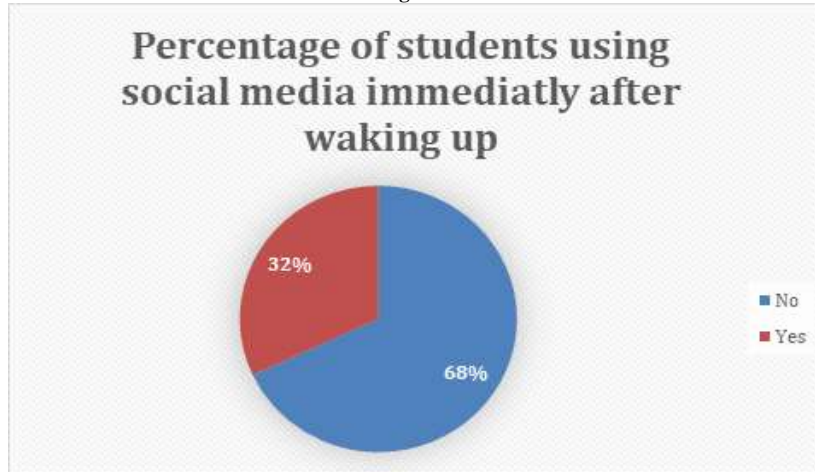


Table 1

TOTAL score of PSQI	
Mean	4.610328638
Standard Error	0.160736281
Median	4
Mode	3
Standard Deviation	2.345868786
Sample Variance	5.503100363
Kurtosis	0.198834434
Skewness	0.727166901
Range	12
Minimum	0
Maximum	12
Sum	982
Count	213

The mean of total score of PSQI is 4.61 ± 2.34 of a total number of 213 students. The total sum of the score was 982. If the participant is having PSQI score ≤ 5 they are having poor sleep i.e., there is a negative correlation between the quality of sleep and PSQI score.

Table 2

Regression Statistics						
Multiple R	0.185615017					
R Square	0.034452935					
Adjusted R Square	0.029876882					
Standard Error	1.488627716					
Observations	213					
ANOVA						
	df	SS	MS	F	Significance F	
Regression	1	16.68427837	16.68427837	7.528964099	0.006594243	
Residual	211	467.5786324	2.216012476			
Total	212	484.2629108				
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	3.213925263	0.225337454	14.26272111	9.18212E-33	2.769724154	3.658126372
PSQI score	0.119586476	0.043582732	2.743895789	0.006594243	0.033673115	0.205499836

INTERPRETATION

The regression model produced $R^2 = 0.0344$, $F(1,211) = 7.528$, $p = 0.0065$ ($p < 0.05$).

DISCUSSION

In the report Digital 2022 April Global statshot, found that there are about 4.65

billion people using social media on this planet. It is seen that there is gradual rise in usage of social media, studies have shown that in 2012 only 5% of adults were using social media and in 2022 it has been increased to about 70% and higher incidence of usage is seen mainly in young adults.⁸

In 2012 among the 16 -64-year-olds people used to spend an average of 90 minutes per day and it has now increased to about two and half hours per day, which is almost 1/6th of our waking hours⁸. In 2022 average usage of social media is 147 minutes and the Philippines is the country which spent the most time on social media with an average of 3 hours and 53 minutes. On a global scale Western Europe is the topmost region using social media {79%}.⁹

Since by spending more time on social media, there is modification of sleep behavior with reduction of overall time of sleep of young adults leading to sleep deprivation.

Use of screen will cause delay in onset of sleep. Mobiles any electronics usually emits Blue light and their wavelength is perfectly suited to that of the daylight, but due to excess use of mobile phones at night time stimulates our brain leading decreased production of melatonin which causes increased alertness and leaving us energized even at our winding time to bed this in turn leads to delay in sleep time, thereby altering the circadian rhythms.¹⁰ Interaction with social media more at night may exacerbate eating, sleeping habits, the ability of concentration, ego, change in performances in daily life, irritability and can also cause lethargy.¹¹ Spending more time on social media also decreases physical activity,^{12,13} may lead to sedentary lifestyle, increases risk of developing non communicable diseases such as diabetes, obesity, hypertension.¹³

The study effect of social media use on learning, social interactions, and sleep duration among Prince Sattam Bin Abdul Aziz University students in Wadi Ad-dawasir by Manjur Kolhar, Raisa Nazir Ahmed Kazi, Abdalla Alameen investigated the purposes for which social networking sites are used and their effects on learning, social interactions, and sleep duration among 300 people. 52% of them reported that social media use had affected their learning activities & 59% of the students reported that excessive time spending on

social media has a negative impact on their relationship with family and friends.¹³

In a survey done by Anushree Tandon, Paneet Kaur, Amandeep dhir, Maki Mantymaki conducted on full time students of 1398 and full-time working professionals of 472 of a large university campus in Northern India, exhibited a higher propensity towards social media addiction in younger adults as compared to older adults.¹⁴

In our study it was found that more than male students females were using social media, which is second by the cohort study done by Holly Scott, Stephany M Biello, Heather woods.¹⁵ But in the cross-sectional cluster sampling study directed on 576 high school students in 2019 in Hamadan, Iran states that the amount of social media use in boys was significantly more than girls.¹⁶

It was found that the students used Instagram (71.8 %) as the most popular social media platform followed by YouTube (22.5%), snapchat (5.16%) and twitter (0.46%), they used it mainly for entertainment (13%), education and knowledge purpose (4.6%) and gaming (2.3%). 79.8% students used social medias for all of the above-mentioned purposes, whereas in a study done at tertiary institution in Singapore, students selected the reasons for the use of social media to keep in touch with friends (95.6%), followed by for entertainment (88.6%), Sharing photos (82.2%), Getting news (81.2%), only 6% of tertiary students reported using social media for Promoting a business.¹⁷

Most of the students from this study (69.4%) spent an average of 1 hour for social media before sleep, 6.5% of students spent 3 hours and some even more than 3 hours (4%). In a survey conducted among adolescents by K. Bartel, R. Scheeren & M. Gradisar they were given individualized phone stop times, 1 hour before bed for one school week, for a baseline week. During one week of phone restriction, adolescents who stopped using their phones earlier, turned their lights off earlier and slept

longer. Overall, there are potential benefits of restricted mobile phone use during pre-sleep period where adolescents slept longer.¹⁸

The mean of total score of PSQI is 4.61 ± 2.34 of a total number of 213 students. The r value of regression statistics for 95% confidence interval was 0.185. It was found that there is a reverse correlation between the time spent on social media and quality of sleep this result is supported by the study done at Iran. Additionally, they also found that there is a direct correlation between the average use in social media and depression (p value- <0.001).¹⁶ A similar result was obtained in the study done at All India Institute of Medical Sciences, Bhubaneswar, Odisha, India.¹⁹

Limitations:

The present study is limited to a sample size of 304 and age group of 18-26 years at MNR Homoeopathic medical college. Only a short period of one month is studied. Additionally, the study does not have equal number of female and male participants. Survey studies have its limitation so to overcome that longitudinal studies with objective methods for measuring sleep parameters are recommended for future research.

CONCLUSION

Social media has its effects on sleep quality. Among students of the age group 18-26 years this is the phase where they have their own mobile phones. Also, in the recent times of Covid 19 pandemic, there has been an increase in the usage of mobile phones and computers owing to their educational purposes which became the means for the students of this generation to get a direct and easy access to social media and getting attracted and addicted to all new social media sites and spend much of their time on browsing. Due to the usage of social media before bedtime, it affects the circadian rhythm which leads to disturbed sleep quality among students, which in turn leads to drowsiness during daytime and decreased

level of concentration. In this survey we conclude that sleep quality was affected for the students who have been spending more time with social media.

Declaration by Authors

Ethical Approval: Approved

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Conflict of Interest: The authors declare no conflict of interest.

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