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IASQ STUDY: INSTAGRAM ADDICTION AND SLEEP QUALITY AMONG COLLEGE STUDENTS IN SOUTH INDIA

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Abstract

Background: Social media addiction is a behavioral addiction that has been shown to have a detrimental effect on the mental health of those who are impacted by it. The purpose of this study was to investigate the prevalence of Instagram addiction and its relationship with sleep quality among college students. **Aim:** To assess the prevalence of Instagram addiction and its association with poor sleep quality among college students. **Methods:** We conducted a cross-sectional study in six colleges with 390 students, from January 2022 to October 2022. Pittsburg Sleep Quality Index was used to determine the quality of sleep and a validated instrument adapted from Kircaburun and Griffiths for assessing Instagram addiction was used**. Results:** Out of 390 participants, 58.7% aged less than 20 years, 65.4% were females, 73.1% were medical students, and almost 95% used the Instagram in smartphones. The prevalence of Instagram addiction was 43.3%, where 33.6% were mildly addicted, 7.7% were moderately addicted and 2.1% were severely addicted. Instagram addiction was more common among non-medical students. The IAS score and the PSQI score showed moderately positive correlation (r-0.324). People with severe Instagram addiction had the worst sleep quality with a mean PQSI score of 8.38 + 2.67. All the 7 components of sleep in PSQI were affected by Instagram addiction. **Conclusion:** We observed that there is a relationship between Instagram addiction and poor quality of sleep. Almost half of the undergraduate students reported poor sleep quality. Strategies to reduce the Instagram addiction and to improve sleep quality in this population is recommended.

Keywords: Instagram, Addiction, Sleep Quality, Behavioral Addiction, Internet Addiction, Internet Use, Cyberpsychiatry.

INTRODUCTION

Internet addiction has been a major behavioral disorder. The significance of the internet cannot be overstated as it has assimilated into everyday living. It makes timely, precise, and pertinent information available[1]. Internet usage has dramatically grown in recent years. A total of more than 5 billion internet users globally as of 2022, internet use has increased exponentially over the past few decades across all age groups. (Internet World Stats, 2023)and more than two-thirds of internet users use social media platforms.[2]

Internet addiction is a widespread issue that seriously impairs social interaction and mental health. Students are a particularly vulnerable group because they have every day, easy access to the internet for free.[3] Social media addiction is a behavioral addiction which includes excessive worry about social media, a constant need to access or use social media, and investing so much time and energy on social media that it interferes with other crucial aspects of one's life[4]. Instagram is a social media application for smartphones that is commonly used to share photos and videos.

Instagram has become one of the most popular social media platform in the world due to the variety of features and tools it offers[5] .

The amount of social media use affects sleep quality correspondingly. Physical, emotional, and social issues are all potential causes of sleep disorders. According to studies, it's challenging for those who use the internet frequently and more than two gadgets to get a good night's sleep[6].As a means of communicating with friends, Instagram is currently gradually taking the place of Facebook which is another popular social media platform. Previous research has demonstrated that higher stress levels increase the chance of being addicted to Facebook, which in turn causes sleep difficulties[7]. Self-liking, agreeableness and conscientiousness are negatively associated with instagram addiction. Instagram addiction would also be affected by different personalities of different people[8]. The body needs to sleep in order to function normally. Technology has advanced, and using a smartphone right before bed has become a habit that shortens sleep length and increases sleep latency[9].

The excessive use of Instagram has a negative impact on productivity and performance, which in turn has a negative impact on sleep quality and leads to health problems[9]. A healthy and happy living depends on getting an adequate quantity of sleep. Worrying internet usage habits are frequently linked to unhappiness, which in turn impacts the quality of sleep, especially in adolescents[10]. Instagram has many benefits, one of them being that it makes it easier to communicate and share private information. However, excessive usage of social media could result in addiction, dependence, and poor sleep quality[11]. People who are more knowledgeable about addiction have a lower risk of being addicted to social media[12].The creation of scales and tests for evaluating Instagram addiction is beneficial for identifying at-risk individuals early on and implementing the appropriate countermeasures[13].

Hence this research focuses on undergraduates and how Instagram addiction affects their sleep quality because there haven't been many studies done on the subject.

MATERIALS AND METHODS

Study setting and population

A descriptive cross-sectional study was conducted among 390 undergraduate students from six colleges from one university, Chennai for a period of 10 months from January to October 2022. Ethical clearance was obtained from the Institutional Ethical Committee. A convenient sampling technique was used to recruit the study participants. We recruited individuals if they met the inclusion criteria which are the following: 1. regular undergraduate students residing in Chennai, 2. having access to Instagram, a social networking site and 3. were actively using the internet. Individuals who were not willing to participate and induviduals who have had pre-existing medical disorders were excluded.

METHODOLOGY

After obtaining a written informed consent from the participant, a semi structured questionnaire which included three sections was administered. The first section contains 10 questions pertaining to sociodemographic details of students, second contains 15 questions pertaining to Instagram addiction scale from Kircaburun and Griffiths[14]; and the third section contains 10 questions pertaining to sleep quality of the students from Pittsburgh sleep quality index.

Data collection was carried out among undergraduate students from six colleges, the colleges were chosen based on convenience the participants who gave consent were randomly recruited from those colleges and screened using questionnaires intended to collect sociodemographic characteristics, Instagram addiction behavior and sleep quality Participants were assured of confidentiality in order to ensure true response. This study does not use a representative sample of a target population, hence can lead to sampling bias.

Sociodemographic details: These include age, sex, hostel lite or day scholar, year of study, type of electronic device preferred, average time spent on Instagram, relation with parents, relation with friends, relation with relatives.

Instagram addiction: Instagram addiction scale is a validated instrument adapted from kircaburun and Griffiths for assessing instagram addiction. It comprises a 6-point likert scale from ever to always. The score ranges from 15 to 90. The cut-off points are as follows: non-addiction (15-37), mild addiction (38-58), moderate addiction (59-73), and severe addiction (over 73)[14].

Sleep quality: The Pittsburgh Sleep Quality Index (PSQI) consists of 19 questions that are self-reported. Seven "component" scores are created from the 19 self-rated items, with each having a range of 0–3 points. A score of "0" in any situation denotes no difficulty, whereas a score of "3" denotes very little difficulty. The final step is to combine the seven component scores to create a single "global" score. This score has a range of 0 to 21, with a score of 0 denoting no difficulty and a score of 21 denoting extreme difficulty in all areas. Scores of 0 to 5 were regarded as "good sleep quality," and scores of 6 or higher as "poor sleep quality"[15].

Statistical analysis

After collection of data, all interviewed questionnaires were checked for completeness, correctness, and internal consistency. Statistical analysis of the data was conducted using SPSS (Statistical Package for Social Science) Licensed V.15.0. Basic descriptive statistics (chart diagram, frequencies, and percentage) were used to describe the categorical variables and means for continuous variables. Adjusted odds ratio, chi-square test, and their 95% confidence intervals were used as indicators of the strength of association. Multivariate logistic regression was also used in the analysis, to identify factors associated with sleep quality. For the level of statistical significance, we set our p value to ≤0.05.

RESULTS

The study was carried out among 390 students in total. Out of 390 participants, majority were below 20 years of age (58.7%) with a female preponderance (65.4%). The majority of the study participants were day scholars (56.2%) and about 73.1% were medical students. Almost 95% of the students preferably used the Instagram application in smartphones and two-fifth (42.1%) of the students spent 1-2 hours per day on Instagram. Table 1 shows the sociodemographic information of the study participants in detail.

Table 1: Sociodemographic details of the study participants

Socio demographic details	Frequency (N=390)	Percentage (%)
Age		
Up to 20 years	229	58.7
More than 20 years	161	41.3
Sex		
Male	135	34.6
Female	255	65.4
Type of stay		
Hostel	171	43.8
Day scholar	219	56.2
Type of course		
Medical	285	73.1
Non-medical	105	26.9
Average time spent per day on Instagram		
Less than 1/2 hour	70	17.9
1 - 2 hours	164	42.1
2 - 3 hours	31	7.9
3 - 4 hours	75	19.2
More than 4 hours	50	12.8
Type of device preferred for using Instagram		
Smart phone	374	95.9
Others	16	4.1
Relation with parents		
Bad	6	1.5
Good	320	82.1
Neutral	64	16.4
Relation with friends		
Bad	6	1.5
Good	319	81.8
Neutral	65	16.7
Relation with relatives		
Bad	30	7.7
Good	193	49.5
Neutral	167	42.8
Instagram addiction status		
No addiction	221	56.7
Mild addiction	131	33.6
Moderate addiction	30	7.7
Severe addiction	8	2.1
Sleep quality (PSQI)		
Poor	179	45.9
Good	211	54.1

The prevalence of Instagram addiction among the study participants was 43.3%. Based on the IAS score, out of 390 students, 131 (33.6%) had mild Instagram addiction, 30 (7.7%) had moderate addiction and 8 (2.1%) students had severe addiction. Figure 1 shows the distribution of Instagram addiction levels among the study participants. Out of 285 students doing medical courses, 120 (42.1%) had Instagram addiction. whereas, out of 105 non-medical students, 49 (46.7%) had Instagram addiction. Figure 2 shows the distribution of Instagram addiction among medical and non-medical students.

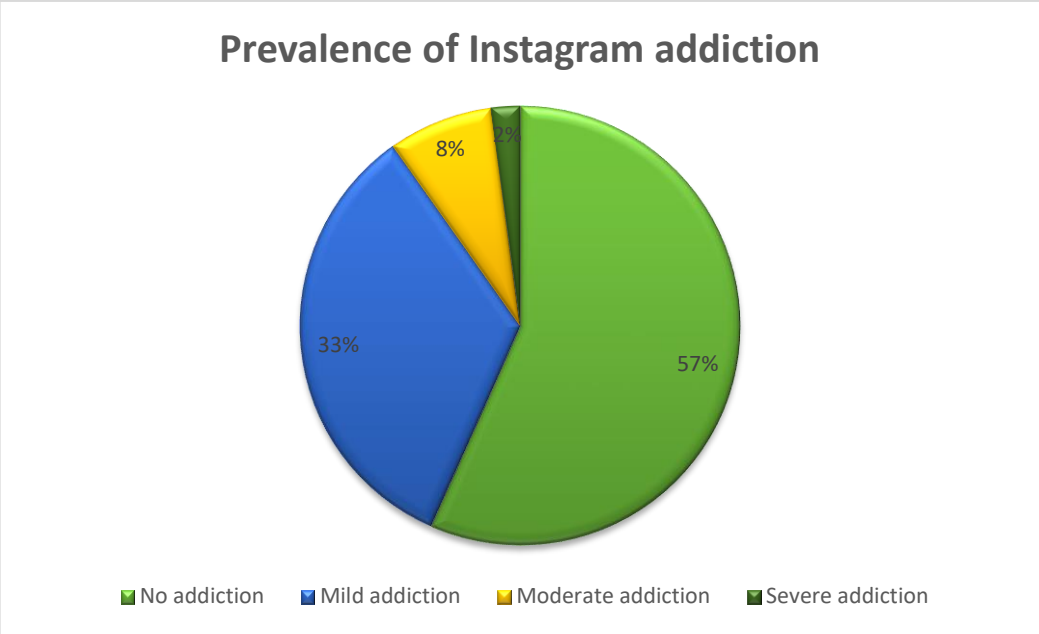

Figure 1: Prevalence of Instagram addiction among the study population

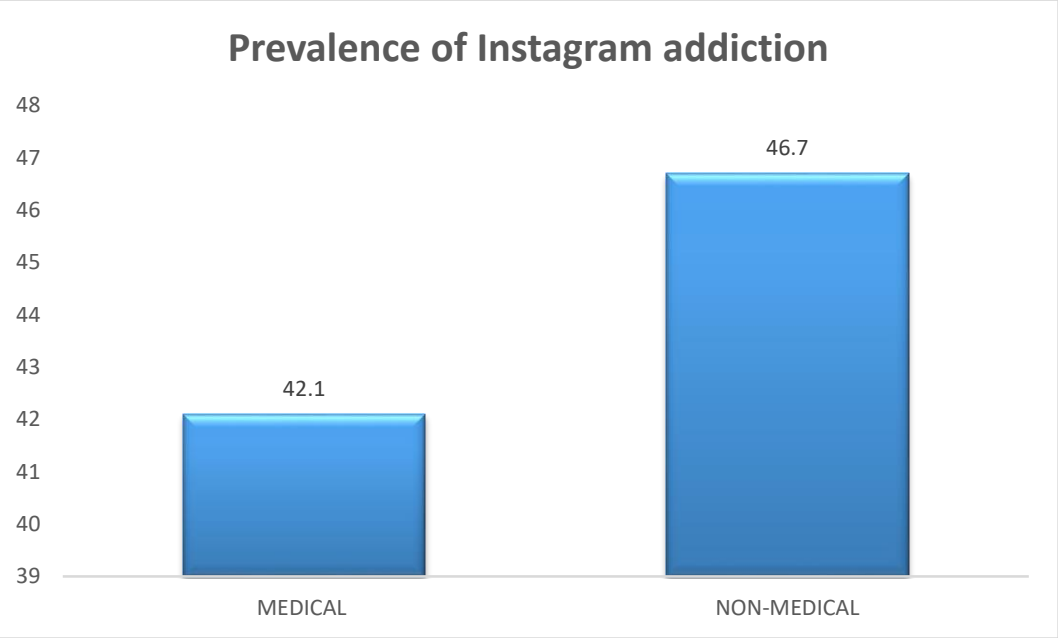

Figure 2: Prevalence of Instagram addiction among Medical and Non-medical students.

The mean IAS score of the study participants was 36.66 + 15.12, whereas the mean PSQI score among the study participants was 5.48 + 3.15. Table 2 shows the mean IAS score and the mean PSQI score in detail.

Table 2: Mean IAS and PSQI score among the study participants.

Scores	Mean + SD	Minimum Score	Maximum Score
IAS Score	36.66 + 15.12	15	90
PSQI Score	5.48 + 3.15	0	17

Among 169 students who had Instagram addiction, 56.8% were less than or equal to 20 years of age, 65.7% were females, 51.5% were day scholars, 71% were medical students. With respect to time spent per day on Instagram, out of 169 Instagram adductors, 37.9% spent 1-2 hours followed by 25.4% spent 2-3 hours and 21.3% spent more than 4 hours. Out of 169 students with Instagram addiction, 1 had bad relationship with parents, 5 had bad relationship with friends and 21 had bad relationship with relatives. On Chi-square analysis, the average time spent per day on Instagram and relationship with relatives were having statistically significant association with Instagram addiction. The IAS score was higher among those students, who were more than 20 years of age, males, hostellers, doing non-medical course, who spend more than 4 hours per day on Instagram, who use Instagram in smart phone, who have bad relationship with parents, friends and relatives respectively. On t-test/ANOVA analysis, the difference in mean IAS score between each category of the average time spent per day on Instagram, relationship with friends and relatives were statistically significant. Table 3 shows the association between Instagram addiction and various socio-demographic details of the students.

Table 3: Association between Instagram addiction and socio-demographic details of the students.

Socio demographic details	Instagram addiction status				Instagram addiction score
	Addicted (169)	Not addicted (221)	Chi square test- (p-value)	Mean + SD	t-test/ ANOVA (p-value)
Age					
Upto 20 years	96	133	0.502	36.41+15.46	0.702
More than 20 years	73	88		37.01+14.65	
Sex					
Male	58	77	0.914	37.52+15.90	0.413
Female	111	144		36.20+14.70	
Type of stay					
Hostel	82	89	0.104	37.46+14.62	0.353
Day scholar	87	132		36.03+15.50	
Type of course					
Medical	120	165	0.420	36.17+14.97	0.298
Non-medical	49	56		37.97+15.49	
Average time spent on Instagram application					
Less than 1/2 hour	11	59	**0.000***	25.99+14.15*	**0.000***
1 - 2 hours	64	100		35.82+12.47*	
2 - 3 hours	15	16		38.55+12.86*	
3 - 4 hours	43	32		40.00+13.96*	
More than 4 hours	36	14		48.14+17.33*	
Type of device preferred for using Instagram					
Smart phone	162	212	0.973	36.72+15.01	0.667
Others	7	9		35.06+17.96	
Relation with parents					
Good	134	186	0.105	35.85+14.40	0.059
Neutral	34	30		40.77+18.21	

Bad	1	5		36.00+10.90	
Relation with friends					
Good	134	185	0.114	36.15+14.84	**0.002***
Neutral	30	35		37.17+14.47	
Bad	5	1		57.83+23.10	
Relation with relatives					
Good	72	121	**0.003***	34.64+15.12	**0.001***
Neutral	76	91		37.38+14.56	
Bad	21	9		45.60+15.02	

On Pearson's correlation analysis, the IAS score and the PSQI score showed moderately positive correlation between each other with an r-value of 0.324. This positive correlation between IAS and PSQI scores were found to be statistically significant with a p-value of 0.00. Figure 3 shows the scatter plot showing the positive association between IAS and PSQI scores. This indicates that, as the Instagram addiction is associated with poor sleep quality.

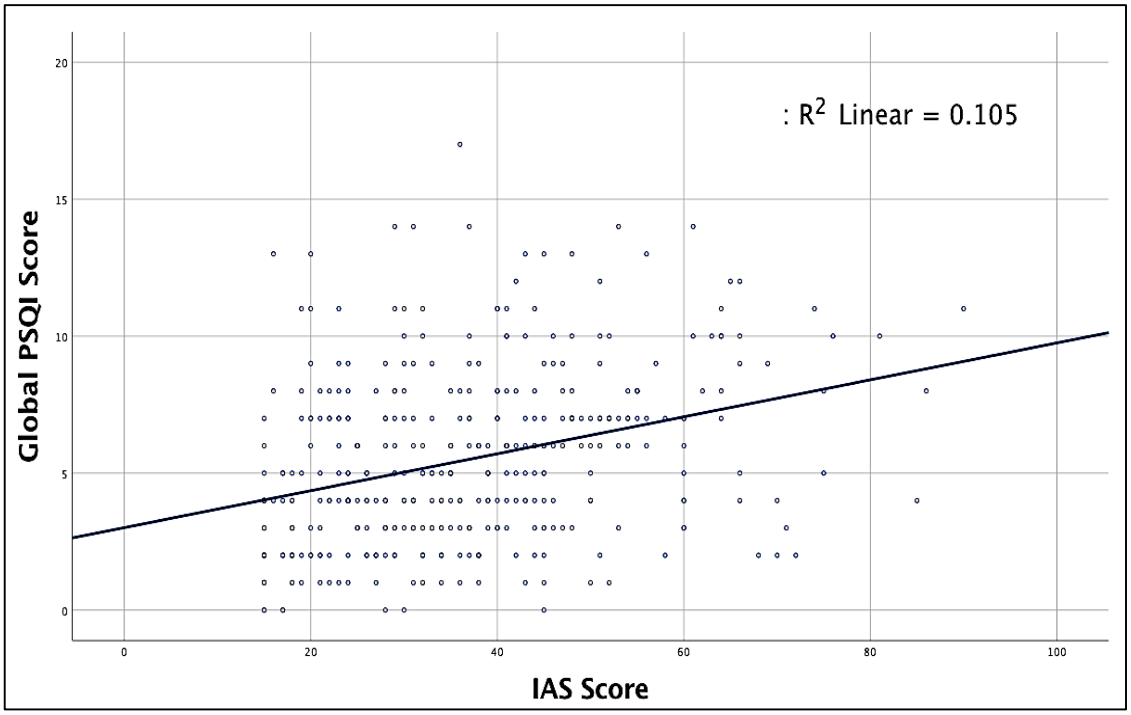

Figure 3: Scatter plot showing association between IAS and Global PSQI scores

Table 4 shows the distribution of PSQI score among different categories of Instagram addiction. We observed that people with severe Instagram addiction had the worst sleep quality with a mean PQSI score of 8.38 + 2.67 followed by moderate and mild Instagram addiction with a mean PQSI score of 6.93 + 3.41 and 6.18 + 2.95 respectively. We also observed that students who are not addicted to Instagram had a good quality of sleep with a mean PQSI score of 4.76 + 3.04. this difference in PSQI score between different categories of Instagram addiction was found to be statistically significant ($p<0.05$).

Table 4: Distribution of PSQI score among different categories of Instagram addiction.

Instagram addiction level	PSQI score (Mean + SD)	95% CI	P-value
Not addicted	4.76 + 3.04	4.36-5.17	**0.000***
Mild addiction	6.18 + 2.95	5.67-6.69	
Moderate addiction	6.93 + 3.41	5.66-8.21	
Severe addiction	8.38 + 2.67	6.14-10.61	

Table 5 shows the association between specific sleep related components and Instagram addiction. The students who are addicted to Instagram showed a higher mean score value in all the 7 components of sleep in PSQI scale, than those students who are not addicted. This shows that, all the components of sleep are being affected by Instagram addiction.

Table 5: Sleep related components and Instagram addiction.

Components of Sleep	Addicted Students	Non-Addicted Students	Total
Subjective sleep quality	1.04+0.74	0.82+0.71	0.92+0.73
Sleep latency	1.18+0.85	0.73+0.77	0.93+0.83
Sleep duration	0.82+0.95	0.81+0.90	0.82+0.91
Habitual sleep efficiency	0.57+0.92	0.43+0.85	0.49+0.88
Sleep disturbances	1.37+0.71	1.1+0.63	1.22+0.68
Use of sleeping medications	0.37+0.72	0.14+0.48	0.24+0.61
Day time dysfunction	1.08+0.88	0.7+0.86	0.87+0.89

DISCUSSION

Instagram is one of the most used social media platforms in recent years. It is being increasingly used among college students. In this study we have tried to find the prevalence of Instagram addiction and its association with sleep quality. The results obtained are discussed below with reference to previous studies.

In this study, out of 390 students, 169 students were addicted to Instagram, with a prevalence of 43.3%, where 33.6% were mildly addicted, 7.7% were moderately addicted and 2.1% were severely addicted. This shows that almost half of the students sampled are addicted to Instagram which is a significant finding. Similar results were observed in a previous study done by Kircaburun K et al.[14,] where the prevalence for Instagram addiction was 33.5% with mild, moderate and severe addiction having a distribution of 26.5%, 6.1% and 0.9% respectively.

In our study, we found that 42.1% of medical students and 46.7% of non-medical students are addicted to Instagram. Non-medical students are slightly more addicted to Instagram than medical students. In a study by Lancy, D'Souza,[9] it was found that medical students had lower Instagram addiction rates than those enrolled in non-professional courses. One of the potential explanations is that students pursuing a career in medicine may be more active in academic pursuits including client engagement, clinical visits, seminars, and other associated activities, which may not be as severe for students studying non-professional courses. They might not have sufficient free time to use social media.

In our study, smartphones are the preferred type of electronic device for using Instagram. Smartphones are preferred because they are easy to carry, occupy minimal space and weigh less compared to other devices.

With respect to quality of sleep, out of 390 students, 179 (45.9%) of them had poor sleep quality based on the Pittsburgh Sleep Quality Index. Thus, in our study almost half of the students had poor sleep quality. In a study by Wolniczak et al.[11], it was reported that, more than half of undergraduate students had trouble sleeping. In our study, it was also found that 43.5% of medical students and 52.4% of non-medical students had poor sleep quality. Compared to medical students, non-medical students have worse sleep quality. Due to all the negative factors that affect the quality of sleep, college students are strongly advised against obsession with Instagram, Instagram overuse, anticipation of Internet access, loss of self-control over the time spent on Instagram, and indulgence in online social activities.

In our study, it was observed that the IAS score and the PSQI score showed statistically significant moderately positive correlation between each other with an r-value of 0.324. Hereby it is evident that Instagram influences the sleep quality of students. As the IAS score increases, the quality of sleep gets poorer. This corroborates with previous study by Basu S et al.[12],which also found that one in three medical students reported having trouble sleeping, and those who had trouble sleeping were more likely to report excessive usage of social media. In another study by Ho, TTQ et al.[7], it has been shown that there is a correlation between stress and sleep problems among Facebook users that is significantly influenced by Facebook addiction.

In our study, Instagram addiction had a statistically significant association with average time spent per day on Instagram. Students who spend more time on Instagram have higher IAS score, which indicates that they are more likely to get addicted than other students. Most students who use the Instagram app for longer than four hours are expected to get severely addicted to Instagram. This is supported by a previous study done by Kircaburun K et al.[14] which observed that daily Internet usage is positively associated with Instagram addiction.

Students who are perceived to have bad relationships with friends and relatives are found to have higher mean IAS scores in our study. This may be due to the fact that, people who have bad relationships with friends or relatives tend to be lonelier and more depressed, which in turn makes them use social media more frequently by getting addicted to it.

We also observed in our study that the quality of sleep gets poorer and poorer as the Instagram addiction level increases. Poor self-control and excessive use of any social media may compromise the quality of sleep. When sleep quality is compromised, there is a clear connection to mental health problems. Improving the sleep quality definitely leads to better mental health[16]. Instagram or any other similar social media platforms for that matter should be utilized with prudence so that it might potentially be used as a tool to help people with their mental health.

In our study, the students who are addicted to Instagram showed a higher mean score value in all the 7 components of sleep in PSQI scale, than those students who are not addicted. Similar findings were observed in a study by Fan ZY et al.[6], it was found that internet use was discovered to be closely related to sleep and to have a negative impact on duration of sleep, which may offer fresh suggestions for healthy media use and sleep hygiene advice. Kumar R S et al.[17] did a study on the use of social networking sites and its repercussions on sleep quality where they found the adverse effects of social networking site usage have an impact on different components

associated with sleep, such as sleep quality, delayed sleep onset, shortening of sleep length, excessive daytime sleepiness (EDS), insomnia, apnea and nightmare.

The human body must get enough sleep to function normally. Based on this study, we conclude that addiction to Instagram has a negative impact on sleep quality. Instagram can be used to make money, motivate speakers, and spread happiness, but when usage goes too far, it can also have negative effects on sleep, depression, and academics. People who lack sleep become more daytime sleep, tiredness and uninterested in their environment. This study highlights the need for us to make intelligent use of Instagram or any other social media for that matter to improve our ability to live a happy and healthy life.

Limitations

The psychiatric symptoms that were related to depression, anxiety disorders, obsessive compulsive disorder or neurodevelopmental disorders were not assessed in this study. This is a cross-sectional study which relies on self-reported data and there are chances of both under reporting and over reporting which leads to recall bias.

CONCLUSION

Our study revealed a strong association between Instagram addiction and poor sleep quality. It was also observed that a greater number of non-medical students had poor sleep quality than medical students. Our study provides insights into the current situation of Instagram addiction among undergraduate students. Taking this into consideration we suggest further research in this area to authenticate these findings and develop strategies to reduce Instagram addiction among undergraduate students and improve their sleep quality.

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