SOCIAL NETWORK ADDICTION AND ITS ASSOCIATION WITH SLEEP: A CROSS-SECTIONAL STUDY

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Abstract

Objective: To study the relationship between social network addictions and sleep disturbance in engineering students using pre-formed pro-forma. **Methodology:** It is a cross-sectional study conducted among 1535 Engineering college students chosen by randomized sampling technique. Social Network Addiction Scale(SNAS) was used to assess addiction to social network. Insomnia Severity Index(ISI) scale was used to record sleep disturbance associated with it. **Results:** Statistically significant insomnia and Social network addiction was found in males in the age group of 18-19 years and 2nd and 4th year students.A positive correlation was observed between substance use, social network addiction and sleep disturbance. **Conclusion:** Insomnia was significantly reported in the students and its association with Social network addiction was significant as well. Substance use behavior had a prominent role in determining sleep and social network addiction.

Keywords: Social Network Addiction, Addiction, Sleep disturbance, Insomnia, Substance Use.

INTRODUCTION

With advancement in technology, use of internet has gained more and more access to the population. In its initial days, this was considered harmless and platform for interaction and expression [1]. However, over the past decade, its use has taken over much of our time, space and lives. While all age groups are affected, college going population is the one who bears the brunt more than often.

New and attractive features of the social network applications are not just a means of entertainment, but also source of distraction and stress relief. Social networking sites provide virtual communities wherein users get to create individual profiles, interact with real-life friends, and meet other people based on shared interests [2].

It has been described as being an "urge driven disorder" and has features similar to compulsion [3]. It has been seen to have multi-dimensional impact on behaviour, cognition, mood and sleep of the young minds. With more and more awareness being spread, its adverse effects are increasingly being recognised in terms of physical as well as mental illness. The study aims to assess the relationship between social network addictions and sleep disturbance in engineering students.

MATERIALS AND METHODS

This is a cross-sectional study conducted in 3 engineering collegesin the Ananthapuramu district of Andhra Pradesh. The study was conducted once approval was obtained from Ethics Committee of our college as well as Head of Engineering colleges. The data was collected using a semi-structured socio-demographic questionnaire, Social Network Addiction Scale [4] and Insomnia Severity Index [5].

Social Network Addiction Scale was used to evaluate social network addiction among the subjects. It consists of 21 questions and it is scaled on a Likert scale from 1 to 7. Insomnia Severity Index is a self-report scale whose 7 items cover a variety of sleep related disturbance. Responses are given on a 5-point scale which ranges from 0 to 4. A total of 1535 students had participated in the study.

Inclusion Criteria: It includes engineering students from 1st to final year studying in different subjects who were willing to give consent.

Exclusion Criteria: It includes individuals with previous psychiatric illnesses, and individuals who were not willing to give consent.

Statistical Methods:

Data was entered in a MS X-cel sheet. Software version SPPS 23.0 was used for statistical analysis. Descriptive statistics in the form of proportions, means, and standard deviations have been applied. A Chi-square test was applied for testing the association of Social network Addiction with socio-demographic variables and insomnia. Independent predictors were determined using linear regression. Suspected cases of mild Social network Addiction and insomnia were counseled by a trained counselor and moderate to severe cases were referred to the psychiatry department for further evaluation and management.

RESULTS

Of the total 1535 participants, 55.53% were males. 63.01% students were between 17-19 years of age. Maximum participation was observed by 1st year students and final year students had the least participation. Of the total, 47.6% were found to have social network addiction. Males were found to have higher social network addiction (60.1%) which was a statistically significant finding. 2nd year and 4th year students had highest percentage of social network addiction which was statistically significant (Table 1). 20% of the students reported having moderate insomnia and 2% had severe insomnia. Again, males had higher rates of insomnia severity at all stages compared to females. 1st and 2nd year students had highest sleep disturbances of the total participants (Table 2).

Students who admitted to using cannabis had highest percentage of social network addiction (68.8%) as well as severe insomnia. There was a significant positive correlation between all the 6 subscales of social network addiction and insomnia of moderate and severe grade. However, no statistically significant correlation was found between these behaviors and substance use in these students (Table 3 and Figure 1)

Table 1: Social network addiction and the socio-demographic & Academic details

	Addiction 731 (47.6%)	No addiction 804(52.4%)	Chi square P value
AGE			2.5 *p = 0.476*
16 yrs(214)	97(45.3)	117(54.7)	
17 Yrs(493)	225(45.6)	268(54.4)	
18 – 19 yrs(475)	**238(50.1)**	**237(49.9)**	

>20yrs(353)	171(48.4)	182(51.6)	
GENDER			
Male(853)	**439(60.1)**	**414(51.5)**	11.37*p = 0.001**
Female(682)	292(42.8)	390(48.5)	
Year Of Studying			
I (756)	345(45.6)	411(54.4)	14.45*p = 0.001**
II(458)	**246(53.7)**	**212(46.3)**	
III(225)	87(38.7)	138(61.3)	
IV(96)	**53(55.2)**	**43(44.8)**	

Table 2: Insomnia and and the socio-demographic & Academic details

	No insomnia 621 (40.5%)	Subthreshold 578(37.7%)	Moderate 306(19.9%)	Severe 30(2%)	Chi square P value
AGE					
16 yrs(214)	94(43.9)	74(34.6)	41(19.2)	5(2.3)	24.8 **p = 0.003***
17 Yrs(493)	224(45.4)	189(38.3)	69(14)	**11(2.2)**	
18 – 19 yrs(475)	**167(35.2)**	**190(40)**	**109(22.9)**	**9(1.9)**	
>20yrs(353)	136(38.5)	125(35.4)	**87(24.6)**	5(1.4)	
GENDER					
Male(853)	**292(34.2)**	**343(40.2)**	**201(23.6)**	**17(2)**	34.413 **p =<0.0001***
Female(682)	329(48.2)	235(34.5)	105(15.4)	13(1.9)	
YEAR OF STUDYING					
I (756)	317(41.9)	281(37.2)	138(18.3)	**20(2.6)**	12.47 *p = 0.188*
II(458)	**173(37.8)**	**184(40.2)**	**96(21)**	**5(1.1)**	
III(225)	86(38.2)	80(35.6)	**56(24.9)**	3(1.3)	
IV(96)	45(46.9)	33(34.4)	16(16.7)	2(2.1)	

Table 3: Social network addiction and insomnia severity

Insomnia	Addiction	No addiction
No insomnia (621)	177 (28.5%)	444(71.5%)
Subthreshold Insomina (578)	300(51.9%)	278(48.1%)
Moderate Insomnia (306)	229(74.8%)	77(25.2%)
Severe Insomnia (30)	25(83.3%)	5(16.7%)

DISCUSSION

Social network use is becoming an increasingly recognized problem especially among adolescents and young adults. It not only affects their mood, but also their cognition and academic performance [6].Social network addiction paves a way to addictions of other types like shopping and food related addiction behaviors, affective disorders and neurosis [7].Stress levels has been found to be temporally related to the addiction behavior [8]. Among others, fear of missing out is another significant reason in adolescents [9].While males have biological and social factors determining the behavior, social and psychological factors are chief in females [10]. There is a negative

association between an overall general health status and addiction if internet and social network [11]. In our study, we studied the addiction and its impact on sleep in engineering students because of the minimal attention given in the past by researchers in as detailed a manner as us.

Predominance of males and age group of 17-19 years was concluded by us.These findings are in replication to reports of Garrett et al. [12]. However, higher mean age was reported by Gupta et al. in their North India based study [13]. We observed a male preponderance in Indian studies in the similar setting[14] as compared to those in developed nations(Garrett et al.2018). However, our findings were also replicated in an Iran based study [15]. 47.6% students were found to have social network addiction with majority being males. Similar findings of were reported by Gupta et al. [13] and Priya et al. [14].2nd and final year students and CSD students showed statistically significant addiction. When attempted to compare with previous literature, no similar study with an in-depth assessment of students could be drawn to the best of our efforts.

A substantial portion of the total students in our study had moderate insomnia (19.9%). Of the total 853 males, 23.6% had moderate insomnia and 2% had severe insomnia which was statistically significant (p<0.0001). Similar findings of sleep difficulties with male predominance were replicated in a North India based study. However, anomalous finding of female preponderance was reported by Santini et al. [16] In their study on French engineering college students. A different methodological approach and unequal enrolment by both sexes in their study can be the reason for their isolated finding. Of the total, 24.9% of 3rd year students had moderate levels of insomnia and severe insomnia was mainly reported by 1st year and final year students. While increased sleep disturbance with an increase in semester years is an oversimplified explanation to an expected finding, severe insomnia reported by 1st year students is an unexpected finding.

Out of 306 students who reported moderate insomnia, 74.8% had social network addiction83.3%of the total students who had severe insomnia had social network addiction. As the severity of addiction increased on SNAS scale, the sleep disturbance was found to increase in the students. A significant positive correlation with p<0.0001 was found in all the six subscales of SNAS and insomnia. Our findings were similar to another study of North India who reported an overall 60% with sleep related difficulties, without further specifications (Gupta et al., 2021). While LeBourgeois et al. [17] reported reduced sleep duration due to social media use in their study, without a further elaboration, few of the peers limited the their study to particular social network sites only [8,9]. Sleep disturbances are often also seen as precipitant to substance use behavior (Ara et al., 2016)[18].We report a positive correlation between substance use behavior, social network addiction and insomnia. While Gurbuz et al. (2021) [19] reported a positive correlation between social media addiction and substance use disorder; their data was not substantiated and elaborated further. While some studies in the past have focused on a particular network like twitter or facebook, we have attempted to include within a spectrum all such networking sites to assess the problem behavior.

CONCLUSION

Insomnia was significantly reported in the students and its association with Social network addiction was significant as well. Substance use behavior had a prominent role in determining sleep and social network addiction.

Limitations of the study:

Firstly, ours was a cross sectional study which had its obvious limitations. Secondly, we used a self report questionnaire which can cause a bias. The overall participation by the students was skewed.In conclusion, our study with its more than modest sample size and being first of its kind in the region can be said to have a good generalization and representation.

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