



Research Paper

STUDY TO EVALUATE PREVALENCE OF DEPRESSION, SLEEP WAKE PATTERN AND THEIR RELATION WITH USE OF SOCIAL NETWORKING SITES AMONG FIRST YEAR MEDICAL STUDENTS

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The stress of getting into medicine can contribute to the development of depression in medical students. The use of social networking sites might help students to decrease their stress levels, increase their social interaction which in turn may curb depression. A cross-sectional anonymous questionnaire-based survey was conducted amongst the first year medical students. The depression status, sleep wakefulness patterns and usage pattern of social networking sites were included in the survey. Data analysis was done and significance and correlation determined with the chi-square test. A total of 128 students participated of whom 11.7% students reported clinical depression. Depression was higher among the females compared to males. Depression was slightly higher, though not significantly so, among users of social networking websites. Overall more than half of the population were intermediate type personalities followed by evening types and morning types. As there were more evening types in users than the non-users there might be some effect of the use of social networking sites on sleep wake pattern but no statistically significant relation could be established.

Keywords: Depression, Sleep-wake pattern, Social networking sites, India, Medical students

INTRODUCTION

Depression may sap the youthful energy of a medical student. It can make him dull and stifle his capacity to face the challenging situations that arise in medical profession. Depression is highly common and by 2020 it will be the second most prevalent condition worldwide (World Health Organization, 2001). There is considerable evidence that rates of depression and suicide are

higher in medical students and these rates remain elevated even when they become physicians (Levine and Bryant, 2000). In this study the prevalence of depression among first year medical students was determined. Sleep is a panacea; it repairs the body and revives the cognitive and receptive power of the mind. So a normal sleep wake pattern holds immense importance for a student as it keeps him fresh

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for the next day of hectic intellectual activities. Morningness-eveningness refers to the individual differences in diurnal preferences, sleep-wake pattern for activity, and alertness in the morning and evening (Susman *et al.*, 2007). Individuals who are characterized by a more extreme position toward morningness are usually known as “early larks,” whereas those who show a more extreme eveningness are known as “night owls.” Larks are early risers, perform mentally and physically at their best in the morning hours, and go to bed early in the evening. Owls stay up late at night, rise at a later time in the morning, and perform best mentally and physically in the late afternoon or evening (Randler, 2008). The aim of the present study is to know the sleep wake patterns in medical students, and determine their diurnal preferences.

Of late the use of social networking sites has become very prevalent among youth in general, including medical students. The use of social networking sites might help students to decrease their stress levels and increase their social interaction which in turn may curb depression. It may also have an effect on the sleep wake pattern. We set out :

- To determine the prevalence of depression among first year medical students
- To determine the sleep wake pattern among first year medical students.
- To determine the usage pattern of social networking sites among first year medical students
- To study the effect of social networking sites usage on sleep quality and depression levels among them.

MATERIALS AND METHODS

The study was conducted in September 2012 on

the first year medical students of a private medical college in Hyderabad, Andhra Pradesh, India. 150 predesigned pretested questionnaires were distributed out of which 128 questionnaires were filled in and returned (response rate 85%). The population of students consisted of both males and females. The questionnaire consisted of three segments namely questions on social network usage patterns, Beck Depression Inventory (BDI), Morningness-Eveningness Questionnaire (MEQ).

The usage pattern of social networking sites was determined by using questions such as the number of hours of use, the time of day at which it is used that is morning, evening or night time; device used to log in, the number of hours logged on in a day.

The BDI is a 21-item self-administered instrument, rated on 4-point scale ranging from 0 to 3 and the total score being 63. A score of 0-16 is considered as normal, 17-20-border line clinical depression, 21-30 moderate depression, 31-40 severe depression and over 40 is extreme depression. Score of 16 and above is taken as depression. The BDI in the questionnaire helped us determine the extent of depression in the study population. The degree of depressive symptoms also was measured.

We used the Hungarian version of the reduced Horne Östberg Morningness-Eveningness Questionnaire (MEQ; Adan and Almirall, 1991) to determine the sleep quality among the students. The questionnaires were analyzed and the data tabulated and studied. A test of significance was done using Chi-Square test to check if use of social networking sites has any effect on sleep wake pattern and depression.

RESULTS AND DISCUSSION

The maximum number of subjects in the study

were of age 18 (69/128) and the minimum were of age 21 (1/128) (Table 1). Female subjects (64.06%) outnumbered the males (35.93%) in the study (Table 2). Clinical depression was found in 11.7% of our medical students (Table 3). This percentage is low as compared to the findings of 60%-70% prevalence of anxiety and depression in medical students of Pakistan (Khan *et al.*, Inam *et al.*, 2003). Studies from western world report prevalence rates of depression in the range of 14–24% (Goebert *et al.*, 2009; Clark and Zeldow, 1988). Depression was present in 39.9% of students of a public sector medical college in Mumbai (Supe, 1998), India, which is higher than our findings. The reason might be the difference of instrument used to assess depression (Yousafzai *et al.*, 2009). The present study was in a medical college from the private sector. We assured students about anonymity and encouraged them to give honest responses which may further explain differences in results. Female students were more likely to report symptoms suggestive of depression as compared to male students which are consistent with western reports (Clark and Zeldow, 1988). A possible explanation for this finding is due to the fact that women articulate depressive symptoms, even very minor ones, more easily than men, and that the excess could actually be due to this fact as much as to a true expression of greater distress (Noble, 2005).

Previous research has shown that leisure activities reduce stress and depression (Shaikh *et al.*, xxxx). But when students depression level using social networking sites were compared with those who do not use the sites not much difference was seen. Perhaps we can surmise that the use of social networking websites is not a stress free leisure activity as compared to others.

Table 1: Age Distribution Among 128 Students

Age	Frequency
17	39
18	69
19	13
20	6
21	1

Table 2 : Sex Distribution Among 128 Students

Gender	Frequency
Male	46 (35.93%)
Female	82 (64.06%)

Table 3: Clinical Classification – Scores Above 16 are Clinically Depressed

Grading of Scores	Frequency	Interpretation
0-16	113 (88.2%)	Not Depressed
17-40 Above	15 (11.71%)	Depressed

Table 4: BDI Scores for Males

Grading of Scores	Frequency	Interpretation
0-16	43(93.47%)	Not Depressed
17-40 Above	3(6.52%)	Depressed

Depression was higher among the females compared to males (10.7% vs 6.52%) (Tables 4 and 5) In the sleep wake pattern analysis more than half (73.4%) were intermediate followed by moderate evening types(14.8%) followed by moderate morning types (11.7%) (Table 6). There were no definite morning or evening types. Among the users of social networking sites 11.95% were

Table 5: Clinical Classification for Females

Grading of Scores	Frequency	Interpretation
0-16	73 (89.02%)	Not Depressed
17-40 Above	9 (10.97%)	Depressed

Table 6: Sleep Wake Pattern Analysis for 128 Students- Morningness-eveningness Questionnaire

Grading of Scores	Frequency	Interpretation
16-30	0	Definite evening
31-41	19 (14.8%)	Moderate evening
42-58	94 (73.4%)	intermediate
59-69	15 (11.7%)	Moderate morning
70-86	0	Definite morning

depressed and 88.04% were not (Table 7). Among the non- users 11.11% were depressed and 88.89% were not (Table 8). As far as the sleep wake pattern among the users 73.1% were intermediate types, 15.21% moderate evening types.10.81% were moderate morning types (Table 9). Where as in the non-users 72.2% were intermediate types ,17.8% were morning types and 13.8% were evening types(Table 10). The test of significance between relationship of users and depression was negative with $\chi^2 = 0.02$, $df = 1$, $p = 0.89$, $OR=1.09$ (Table 11). The test of significance of relationship between sleep wake pattern was also negative with $\chi^2 = 0.606$, $p = 0.005$ (Table 12).

Table 7: Scores of BDI Among Users

Grading	Frequency	Interpretation
0-16	81 (88.04%)	No Depression
17-40 Above	11 (11.95%)	Boderline To Extreme Depression

Note: 11.95% Of Users Were Clinically Depressed.

Table 8: Scores of BDI Among Non-users

Grading of Scores	Frequency	Interpretation
0-16	32(88.8%)	Not Depressed
17-40 Above	4(11.11%)	Depressed

Table 9 : Scores Of MEQ Among Users

Grading	Frequency	Interpretation
16-41	14(15.21%)	Evening Type
42-58	68((73.91%)	Intermediate
59-86	10((10.86%)	Morning

Table 10 : Scores of MEQ Among Non Users:

Grading	Frequency	Interpretation
16-41	5(13.8%)	Evening
42-58	26(72.2%)	Intermediate
59-86	5(17.8%)	Morning

Table 11: Significance Between Using Social Networking Sites and Depression

	Depressed	Not Depressed	Total
Users	11	81	92
Non Users	4	32	36
Total	15	113	128

Note: For which chi square value is 0.02 and p=0.89 odds ratio is 1.09, Inference – relation not significant.

Table 12 : Significance Between Sleep Wake Pattern and Use of Social Networking Sites

	Morning	Intermediate	Evening	Total
User	10	68	14	92
Non User	5	26	5	36
Total	15	94	19	128

Note: χ^2 value =0.606,at p=0.005, Inference –relationship not significant.

CONCLUSION

Over all for sleep wake pattern among the 128 population more than half were intermediate type personalities followed by evening types and morning types. Depression was almost same among users and non-users with depression slightly higher among users, but no significant relation could be established. As there were more evening types in users than the non-users there might be some effect of the use of social networking sites of sleep wake pattern but no significant relation could be established.

REFERENCES

1. Clark D C and Zeldow P B (1988), "Vicissitudes of Depressed Mood During four years of Medical School", *JAMA* Vol. 260, pp. 2521-2528.
2. Clark D C and Zeldow P B (1988), "Vicissitudes of Depressed Mood during four years of Medical School", *JAMA*, Vol. 260, pp. 2521-2528.
3. Goebert D , Thompson D, Takeshita J, Beach C, Bryson P, Ephgrave K *et al.* (2009), "Depressive symptoms in medical students and residents: a multischool study", *Acad. Med.*, Vol. 84, pp. 236-241.
4. Inam S N B, Saqib A, Alam E 920030, "Prevalence of anxiety and depression among medical students of private university.", *J Pak Med Assoc.*, Vol. 53, pp. 44-47.
5. Khan M S, Mahmood S, Badshah A, Ali S U, Jamal Y (2006), "Prevalence of Depression, Anxiety and their Associated Factors Among Medical Students In Karachi, Pakistan", *J Pak Med Assoc.*, Vol. 56, pp. 583-586.
6. Levine R E and Bryant S G (2000), "The Depressed Physician: A Different Kind of Impairment", *Hosp Physician*, Vol. 36, pp. 67-73.
7. Noble R E (2005), "Depression in Women", *Metabolism*, Vol. 54, pp. 49-52.
8. Randler C (2008), "Differences Between Smokers and Non Smokers in Morningness-eveningness", *Soc. Behav. Pers.*, Vol. 6, pp. 673-680.
9. Shaikh B T, Kahloon A, Kazmi M, Khalid H, Nawaz K, Khan N, *et al.* (xxxx). Students, Stress and Coping Strategies: A Case of Pakistani Medical School.
10. Supe A N (1998), "A study of stress in medical students at Seth GS Medical College", *J Postgrad Med*, Vol. 44, pp. 1-6.
11. Susman E J, Dockray S, Schiefelbein V L, Herwehe S, Heaton J A and Dorn L D (2007), "Morningness/Eveningness, Morning-to-afternoon Cortisol Ratio, And Antisocial Behavior Problems During Puberty", *Dev. Psychol.*, Vol 43, pp. 811-822.
12. World Health Organization (2001), "Mental and neurological disorders". Fact sheet No. 265.
13. Yousafzai W A, Ahmer S, Syed E, Bhutto N, Iqbal S, Siddiqi M N *et al.* (2009), "Well-being Of Medical Students And Their Awareness On Substance Misuse: A Cross Sectional Survey In Pakistan", *Annals of General Psychiatry*, Vol. 8, p. 8.