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PREVALENCE OF ANXIETY AND INSOMNIA AMONG THE MEDICAL STUDENTS: A CROSS SECTIONAL STUDY AT A TERTIARY CARE HOSPITAL

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ABSTRACT

Anxiety among the medical students is a common behavioral issue which affects the lifestyle and academic performance. It includes a cognitive malfunction, perceptual symptoms and affective symptoms. The other behavioral problems which frequently affect this group are insomnia, which is a complaint of inadequate sleep. Aim of the study was to study the prevalence of anxiety and insomnia among the medical students in a tertiary care hospital of Delhi. It was a cross sectional study. A prestructured questionnaire based study, for a span of 1 month. The study population included the students studying in the 1st, 2nd and 3rd professionals Part I and II. Hamilton anxiety scale and Athens insomnia scale was used to collect the data. Data analysis was done using SPSS ver 16. A total of 188 study subjects were included in the study. The overall prevalence of anxiety and insomnia was found to be 28.72% (54/188) and 30.3% (57/188) respectively. It was found that prevalence of anxiety was more in females however prevalence of insomnia was more in males. The mean anxiety and insomnia score were found to be highest in the 3rd professional part II students. Anxiety and insomnia among the hostellers was found to be more as compared to non-hostellers. Anxiety and insomnia among the medical students should be recognized and attempts should be made to alleviate them.

Keywords: *Anxiety, Insomnia, Medical Students*

INTRODUCTION

The training of physicians in the medical schools is a significant cause of psychological stress.

A number of studies have addressed stress among medical students (John *et al.*, 1997; Vaz *et al.*, 1998; Rosal *et al.*, 1997; Mitchell *et al.*, 1983; Vitaliano *et al.*, 1989; Stewart *et al.*, 1995; Bramness *et al.*, 1991).

Multiple factors are involved which include long duration of studies, large volume of material to be studied, stress of academic performance and evaluations conducted as a part of the curriculum (Calkins *et al.*, 1994).

Consequently this at risk group suffers from deteriorating classroom performance, impairment in functioning, stress induced disorders and also negative effects of emotional distress causing impairment in functioning (Bramness *et al.*, 1991; Calkins *et al.*, 1994; Malathi and Damodaran, 1999).

Thus this study envisages exploring the magnitude of anxiety and insomnia and aids to identify predisposing factors resulting in morbidity in this vulnerable group of students.

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MATERIALS AND METHODS

This study was a cross sectional study conducted in a medical college of Delhi. The study subjects consisted of students studying in 1st, 2nd and 3rd professional part I and II. The 1st professional included students from 1st and 2nd semester, the 2nd professional included students from 3rd, 4th and 5th semester, 3rd professional part 1 included 6th and 7th semesters and 3rd professional part 2 included students from 8th and 9th semesters respectively. An effort was made to include all the students however all those students who were on leave or absent due to any reason were excluded from the study. The study was conducted for a period of 2 months in the months of June and July 2012. 188 students were included in our study. Data collection was done by a predesigned, prestructured, pretested questionnaire. Prior approval was sought from the ethical committee of the institute and written consent was obtained from study subjects. The study subjects were explained the purpose of the study and were assured about the confidentiality and anonymity of the information so obtained. The questionnaire included questions on sociodemographic profile namely age, sex, professional year and residence. Hamilton Anxiety Scale¹⁰ which has a **Sensitivity** of 85.7% and **Specificity** of 63.5% (¹¹) was used for assessing anxiety among study subjects; according to which a score of equal to and above 18 was considered as abnormal and above 30 as severe. Similarly Athens insomnia scale (Soldatos *et al.*, 2000) was used for insomnia which has a sensitivity of 93% and specificity of 85% (Soldatos *et al.*, 2003). A score of equal to and above 6 is considered to be a case of insomnia on this scale. The data thus collected was converted into a computer based spreadsheet and analyzed using SPSS ver 16. Tests of significance were applied wherever applicable. A p value <0.05 was considered significant.

RESULTS AND DISCUSSION

Results

A total of 215 medical students were enrolled in the study .However only 188 students studying in various professional years could be included. Among the respondents majority (62.77%) were males while girls constituted 37.23% of the study population.54.25% students were hostellers while 45.75% constituted the non-hostellers. The sociodemographic characteristics of the study population have been depicted in Table 1.

Table1: Sociodemographic profile of the study population

Demographic Characteristics of Study Subjects				Number(N=188)	Percentage
Sex	Male		118	62.76%	
	Female		70	37.23%	
Professional Year	1 st		58	30.85%	
	2 nd		28	14.89%	
	3 rd Part I		70	38.11%	
	3 rd Part II		42	22.34%	
Residence	1 st	Hostellers	28	48.27%	
		Non Hostellers	30	51.72%	
	2 nd	Hostellers	14	50%	
		Non Hostellers	14	50%	
Hostellers(n=102)	3 rd Part I	Hostellers	37	61.61%	
Non Hostellers(n=86)		Non Hostellers	23	38.33%	
	3 rd Part II	Hostellers	23	54.7%	
		Non Hostellers	19	45.2%	

Overall prevalence of anxiety in all study subjects was found to be 28.72% (54/188). Out of 58 students in 1st professional, 14 were found to be suffering from anxiety with a mean score of 20(+/-2.23). In the 2nd professional 2 out of 28 students was suffering from anxiety, with a mean anxiety score of 19.7(+/-1.6). Eighteen students out of 60 from 3rd professional part I was suffering from anxiety with a mean score of

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23.5(+/-2.01). In the 3rd professional part II, 20 students out of 42 students were found to have scored over 18 with a mean score of 24.6(+/-2.36) on the anxiety scale. Prevalence of anxiety was found to be highest in students of 3rd professional part II which was found to be statistically significant ($p < 0.05$, 0.0002). These results have been depicted in Table 2.

Table 2: Prevalence of anxiety and mean anxiety scores among study subjects according to current professional year (N=188)

Serial No.	Professional Year	No of students with anxiety	Mean Anxiety score of students with anxiety(+/- SD)	No of students with no anxiety	Mean anxiety Score of students with no anxiety(+/-SD)
1.	1 st Professional (n=58)	14(24.1%)	20(+/-2.23)	44(75.86)	16(+/-1.07)
2.	2 nd Professional (n=28)	2(7.04%)	19.7(+/-1.6)	26(92.86)	10(+/-2.03)
3.	3 rd Professional Part I (n=60)	18(30%)	23.5(+/-2.01)	42(70.00%)	11(+/-1.87)
4.	3 rd professional Part II (n=42)	20(47.6%)	24.6(+/-2.36)	22(52.38%)	13(+/-1.62)
	Total(N=188)	Total n=54(28.72%)		Total n=134(72.17%)	

The prevalence of insomnia was found to be 30.31% (57/188) and its distribution among the students studying in various professionals has been shown in the table 3 below. Among the 58 students studying in 1st professional, 16 were found to have a mean insomnia score of 7 (+/-0.83) in 1st professional. Only 1 student in the 2nd professional was found to be suffering from insomnia out of 28 and had a mean score of 8. Seventeen out of 60 students were found to be suffering from insomnia in the 3rd professional part I with a mean score of 12.3(+/-1.88). In 3rd professional part II, 23 students out of 42 were found to be suffering from insomnia with a mean score of 13(+/-2.28). Prevalence of insomnia was highest in students studying in 3rd professional part II($p < 0.000$) which was found to be statistically significant.

Table 3: Prevalence of insomnia and mean insomnia score among study subjects (N=188)

Serial No.	Professional years	No. of students with insomnia n (Percentage)	Mean Insomnia Score(+/-SD)	No. of students with no insomnia	Mean Insomnia Score (+/-SD)
1.	1 st Professional (n=58)	16(27.8%)	7(+/-0.83)	9	3(+/-0.56)
2.	2 nd Professional (n=28)	1(3.6%)	8*	27	3.5(+/-1.23)
3.	3 rd Professional Part I (n=60)	17(28.3%)	12.3(+/-1.88)	43	4.5(+/-1.02)
4.	3 rd professional Part II (n=42)	23(54.8%)	13(+/-2.28)	19	5(+/-0.83)
	Total(N=188)	n=57(30.31%)		n=131(69.68%)	

*Not applicable since 1 student.

The Table 4 below shows that the prevalence of anxiety in females was higher; 37.14%(26/70) than males 23.73% (28/118) and it was found to be statistically significant ($X^2 = 4.12$, $p = 0.042$) whereas the

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prevalence of insomnia in males was 36.44%(43/118) and in females was 20% (14/70); which was found to be statistically significant as well ($X^2= 5.6212$, $p=0.017$).

Table 4: Sexwise prevalence of anxiety and insomnia

Sex	Anxiety n (Percentage)	Insomnia n(Percentage)
Males	28(23.73%)	43(36.44%)
Females	26(37.14%)	14(20%)
Total	54(28.72%)	57(30.31%)

The table 5 shows that the hostellers had a higher prevalence of anxiety viz 40.69 %(35/86), as compared to 18.62%(19/102) in non- hostellers and this was found to be statistically significant ($p=0.0008$). Similarly insomnia in hostellers was found to be more 40.69 % (34/86) as compared to non-hostellers 22.5%(23/102) which was found to be statistically significant as well ($p=0.011$).

Table 5: Prevalence of anxiety and insomnia among hostellers and non hostellers

Residence	Anxiety n(Percentage) (28.72%)	Insomnia n(Percentage)
Hostellers(n=86)	35(40.69%)	34(39.53%)
Non Hostellers (n=102)	19(18.62%)	23(22.5%)
Total(N=188)	54(28.72%)	57(30.3%)

Discussion

A total of 188 medical students from all professional years were included in the study. A little less than a third of the students were found to be suffering from anxiety and insomnia. Anxiety was found to be more in girls compared to boys.

However opposite findings were observed for insomnia showing a higher prevalence in males. Highest levels of anxiety were seen in 3rd professional part II, followed by 3rd professional part I. Least anxiety was seen in 2nd professional students.

Similar trend was true for insomnia as well. Both anxiety and insomnia were found to be more in hostellers as compared to non-hostellers.

Most of the previous studies have addressed stress and depression among the medical students ^{1,2}Overall prevalence of anxiety and insomnia in our study was found to be 28.72% and 30.3% respectively which was found to be in concordance with a previous study done in India at a rural health university, Ahmednagar, Maharashtra by Syed and Mishra (2009) using a general health questionnaire (GHQ-28) which found overall prevalence of anxiety and insomnia to be 31%.

Studies done in Nepal by Chandrashekhar *et al.*, (2007) found overall psychological morbidity to be 20.9% using a General health questionnaire. Study done by Bazmi (2007) found that 66% of the females suffered from anxiety, however in our study 37.14% of the females were found to be suffering from anxiety. Study done by Ali *et al.*, (1998) in Pakistan found the prevalence of anxiety and depression amongst the medical students to be 43.89% using an indigenous scale .Little work has been done till date to address anxiety and insomnia in this vulnerable group using standardized scales. The phase of entering the medical school and adapting to the stress of new learning environment may cause anxiety in 1st professional medical students.

Further, the clinical phase of learning which involves the clinical skills assessment and development of skills of patient encounter may be the reason of the second peak causing anxiety in the 3rd professional part II students. This may also be attributed to pressure of preparation for post graduate entrance examinations. The decreased levels of anxiety and insomnia in the 2nd professional may be due to

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involvement of students in extracurricular activities. A greater proportion of hostellers having anxiety and insomnia may be attributed to change of environment, peer pressure and home sickness.

Limitations

There were several limitations in our study. Socioeconomic status of the students; home stressors and substance abuse were not elicited.

Conclusion

Morbidity due to anxiety & insomnia is comparable to other studies in Indian medical students, but is less as compared to the students in other nation. It was found that the prevalence of anxiety was more in females and prevalence of insomnia more in males. The anxiety and insomnia can be ameliorated among the medical students by the teachers, who may act as a buffer to balance the effects of changing environment. Thus our study emphasizes the raising concern about anxiety and insomnia as a health problem. **Key Messages:** Anxiety and Insomnia is a significant concern among medical students. In majority of the cases, appropriate counseling could help to ameliorate the issue. Thus awareness about the presence of these health concerns could aid in preventing future morbidities.

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