Prevalence of Anxiety and Depression among Medical Students of Private University

S .N. B. Inam (Department of Community Health Sciences, Karachi.)
A. Saqib (Department of Community Health Sciences, 4th year student, Karachi.)
E. Alam (Ziauddin Medical University. Karachi.)

Abstract

Objective: To assess anxiety and depression levels among medical students of a private university by using a self-administered anxiety and depression questionnaire.

Methodology: A cross sectional study was done on the students of Ziauddin Medical University, who had spent more than six months in the medical school. A self-administered questionnaire was given to the students, present in the class and willing to participate in the study. During the survey students of 5th year were not available. The instrument used to asses the anxiety and depression levels was the, Aga Khan University Anxiety and Depression Scale (AKUADS). Additional questions regarding socioeconomic variables were also included in the survey instrument, such as student's birth order, monthly income, number of siblings, and monthly expenditure on education. Data analysis was done on Epi info version 6.

Results: There were 252 students in 4th year MBBS to 1st year MBBS. Of these 189 were present during the survey. Using anxiety and depression scale it was found out that 113 (60%) students had anxiety and depression. Prevalence of anxiety and depression in students of 4th year, 3rd year, 2nd year and 1st year was 49%, 47%, 73% and 66% respectively. It was significantly higher in 1st year and 2nd year, as compared to 3rd and 4th year ($p<0.05$). It was seen that birth order, monthly income, number of siblings and monthly expenditure on education did not affect the prevalence of anxiety and depression.

Conclusion: This study suggests that medical students experience anxiety and depression, the finding is consistent with other western studies, however there is no local data available to support our findings. The study finding highlights the need of psychiatric counseling and support services available to vulnerable students. These findings should be further explored in longitudinal studies to identify the stressors leading to these outcomes and appropriate interventions (JPMA 53:44;2003).

Introduction

Depression and anxiety levels in the community are considered as specific indicators for mental status of a person. Various studies have documented stress among medical students.[1-6-9] Among medical students, academic stressors include the volume of material to be learned, academic performance and evaluation (examination and continuous assessment).[7] Academically less successful students reported somewhat higher levels of depressive ideation and symptomatology[6] The potential negative effects of emotional distress on medical students include impairment of functioning in classroom performance and clinical practice, stress-induced disorders and deteriorating performance[8.9] Students

in extreme stress or depression need serious attention[2], otherwise inability to cope successfully with the enormous stress of education may lead to a cascade of consequences at both personal and professional levels.[1]

There should be a system to identify the prevalence of their training and to specify the relevant contributing factors. This knowledge can assist in instituting specific interventions.

Methodology

A cross sectional study was done on students of Ziauddin Medical University, who had spent more than six months in the medical school. A self-administered questionnaire was given to students, who were present in the class at the time of distribution and were willing to participate in the study. During the survey 5th year students were not available. The survey was done at a time when the students did not have any major examination scheduled.

The instrument used to asses the anxiety and depression levels was, Aga Khan University Anxiety and Depression Scale (AKUADS).[11] It has been validated on a statistically appropriate sample size, in urban squatter settlement of Karachi.[12] It was developed from the complaints

of 150 anxious and depressed patients. The questionnaire has 25 items[13] psychological and 12 somatic, which increases its reliability for use as a screening instrument because most of the available instruments comprise of either psychological or somatic items. At a cut off score of 19 points AKUADS has specificity of 81%, sensitivity of 74%, a positive predictive value of 63%, and negative predictive value of 88%12, which is higher than other available scales like the self-reporting questionnaire (SRQ).[13] It also has a high internal consistency as all its stems are significantly related to the total score and stems inquiring about psychiatric issues are significantly related to each other, and the same is true for the stems of somatic manifestations.[12] These are desirable attributes of the questionnaire, which make it reliable, valid and generalisable

To determine the relationship between socioeconomic variables and prevalence of anxiety and depression, additional questions were also included in the survey instrument, such as student's birth order, monthly income, number of brothers and sisters and monthly expenditure on education. To ensure anonymity, the respondents were asked not to put names or other identifying notation on the questionnaire. Data entry and analysis was done on Epi info version 6.0.

Results

There were 252 students in 4th year MBBS to 1 st year MBBS. Of these 189 (75%) were present during the survey. Among them 60 (32%) were males and 129 (68%) females. Using anxiety and depression scale it was found out that 113 (60%) students had anxiety and depression. Among them 80 (60%) were females and 33 (55%) males. Prevalence of anxiety and depression in students of 4th year, 3rd year, 2nd year and 1st year was 49%, 47%, 73% and 66% respectively. It was significantly higher in 1st year and 2nd year students, as compared to 4th year and 3rd years students (p

Table 1. Anxiety and depression cases according to batch and gender.

Batch	Number of students			Anxiety and depression		
	Male	Female	Total	Male	Female	Total
				No. %	No. %	No. %
4th Year	16	21	37	5 (31.2)	13 (61.9)	18 (48.6)
3rd year	7	38	45	2 (28.6)	19 (50.0)	21 (46.7)
2nd year	21	31	52	14 (66.7)	24 (77.4)	38 (73.1)
1st year	16	39	55	12 (75.0)	24 (61.5)	36 (65.5)
Total	60	129	189	33 (55.0)	80 (60.0)	113 (59.8)

Using AKUADS at a cut-off score of 19 points, anxiety and depression was significantly higher in 1st and 2nd year as compared to 3rd and 4th year ($p < 0.05$).

It was seen that birth order, monthly income, number of brothers and sisters and monthly expenditure on education did not affect the prevalence of anxiety and depression (Table 2).

Table 2. Anxiety and depression according to socioeconomic variable.

Variable		No. of students	Anxiety and depression	
			No.	%
Birth order	1	78	50	64
	2	56	34	61
	3	21	14	67
	>3	31	13	42
	Not recorded	3	2	67
Monthly Income	<20,000	30	20	67
(Rs.)	20,000 - 29,999	18	9	50
	30,000 - 39,999	20	8	40
	40,000 - 49,999	24	14	58
	≥50,000	73	48	66
	Not recorded	24	14	58
Brother and Sister	0	5	5	100
	1	22	9	41
	2	39	23	59
	3	54	32	59
	>3	64	41	64
	Not recorded	5	3	60
Monthly expenditure	<20,000	54	32	59
on education (Rs.)	20,000 - 29,999	33	14	42
	30,000 - 39,999	23	15	65
	≥40,000	10	5	50
	Not recorded	69	47	68

Discussion

Anxiety and Depression can be taken as reliable indicator for assessment of mental illness in a community.'4 The emotional status of students during medical school training has been a source of concern, reported as early as 1956.15 As it may effect the over all performance of students and lead to a cascade of consequences at both personal and professional levels.

Several studies have reported significant distress among medical students.16-18 On the other hand some studies have found little or no evidence of stress among medical students.'92' In our study 60% students had anxiety and depression. The prevalence appears to be high. Since the questionnaire was self-administered and anonymous. therefore further work-up on students rating high on the AKUADS could not be carried out.

Western data suggest that females experience high levels of stress as compared to males.'3 The possible reasons explained by different studies are: i) females are more likely to report concerns about the volume and complexity of the material they had to cover, ii) they are also more likely to report stress due to self expectation and feeling of lack of competence', iii) and tendency for women to over report medical and psychological symptoms.21 We did not find any significant gender difference for presence of anxiety and depression.

In this study it is seen that prevalence of anxiety and depression was high among newly entered students (1st and 2nd year) as compared to students who have cleared the first professional examination (3rd and 4th year). That could he due to stress of new study environment. However in the absence of baseline difference we cannot support this finding.

As less is known about the predictive variable that might effect the stress levels of the medical students22, we also included socioeconomic variables (table 2) in our questionnaire along with the AKUADS. We did not find any significant relationship of stress with socioeconomic variables. However some studies consider parental income23 and social support24 as a definitive variable, which may influence the academic performance and.mental status of medical students.

The generalizability of the study results is limited by the characteristic of the sample, which was recruited from a single private medical school. Cause-effect association between the studied psychological variables and depression cannot be made from the study. Other limitations include lack of base line information concerning mental status of medical students at the time of entrance in the medical school and lack of population-based data to support our results and to compare our findings with general population. Anxiety and depression has a very high cost to individual and society, including medical school dropout16.25, suicide26, degeneration of relationship27, marital problems28, impaired ability to work effectively.28 Screening at the time of entrance and further evaluation of positive cases by a psychiatrist can establish baseline data. Follow-up studies for monitoring prevalence of anxiety and depression will help in instituting intervention strategies.

References

1.John A, Towes MD ,Jocelyn M, et al. Analysis of stress levels among medical students residents and graduate students at four Canadian school of medicine. Acad Med 1997; 72:997-1002.

2.Vaz RF, Mbajiorgu EF, Acuda SW. A preliminary study of stress levels among first year medical students at the university of Zimbabwe. Cent Afr j Med 1998:44:214-19.

3.Rosal MC, Ockene JK, Barrett sV. et al. A longirudnal study of students depression at one medical school. Acad Med Edu 1997; 72:542-6.

4.Mitchell RE.Mathews JR. Grandy TG, et al. The question of stress among first year medical students. J. Med Edu 1983: 58:367-72.

5.Vitaliano PP. Mairo RD. Russo J, et al. Medical students distress a longitudinal study. J Nerv Ment Dis 1989:177:70-6.

6.Stewart SM, Betson C, Marshall i, etal. Stress and vulnerability in medical students. Med Edu 1995; 29:119-27.

7.Calkins EV, Arnold L, Willough TL,et al. Medical students perception of stress, gender and ethnic consideration. Acad Med I 994:69(Supp. I):S22-4.

8.Malathi A, Damodaran A, Stress due to exams in medical students- role of yoga. Indian J Physiol Pharmacol 1999 Apr. 43~2]: 218-24.

9.Bramness JA, Fixdal TC. Vaglum P. Effect of medical school stress on the mental health of medical students in early and late clinical curriculum. Acta Psychiatr Scand 1991; 84:340-5.

10.Shapiro SL, Schwartzge, Bonner G. Effect of mind fullness - based stress reduction on medical and premedical students. J Behav Med 1998; 21:581-99.

11.All B, Hashim RM, Khan MM, et al. Development of an indigenous screening instrument in Pakistan: the Aga Khan University anxiety and depression scale. J Pak Med Assoc 1998:48:261-5.

12.All B. Validation of an indigenous screening questionnaire for anxiety and depression in an urban squatter settlement of Karachi, J Coil Physician Surg 1998; 8:207-10.

13.Ali BS, Amanullah S. A comparative review of two screening instruments: the Aga Khan University anxiety and depression scale and the self reporting questionnaire. J Pak Med Assoc 1998:48:79-82.

14.Goldberg D. Identifying psychiatric illnesses among general medical patients. BrMedJ 1985; 291 161-62.

15.Saslow G. Psychiatric problems of medical students. J Med Edu. 1956:31: 27-33.

16.Clark DC, Zeellow PB. Vicissitudes of depressed mood during four years of medical school. JAMA 1988:260: 2521-8.

17.Lloyd C, Crartrell NKA. Psychiatric symptoms in medical students. Compr Psychiatry 1 984;25:552-65.

18.Vitaliomo PP. A biopsychosocial model of medical student distress. J Behav Med 1988;11:311-13.

19.Helmers KF. Stress and depressed mood in medical students, law students and graduate students at McGill University. Acad Med 1997:72:708-14.

20.Hems M, Fahey 5, Leiden L. Perceived stress in medical, law and graduate students. J Med Edu 1984;59:169-79.

21.Verbuegge LM. Gender and health: an update on hypothesis and evidence. J Health Soc Behav 1985:26:156-82.

22.Stewart SM, Betson C, Lam TM, et al. Predicting stress in first year medical students: a longitudinal study. Med Edu l997;3l :163-8.

23.Fadem B. Schuchman M, Simring SS, et al. The relationship between parental income and academic performance of medical students. Acad Med l995;70:l 142-44.

24.Rospenda, KM. Hepret J. Richmom JA. Effects of social support on medical students performances. Acad Mcd 1994:496-500.

25.Zoccolillo M. Major depression during medical training (editorial). JAMA1 988;260:2560-1 1

26.Pepitone A. Rockwell F. Rockwell D. et al. Fifty two medical students suicide. Am J Psychiatry 1981; 138:198-201.

27.Clark El, Reicker PP. Gender Differences in relationships and stress of medical and law students J Med Edu 1986:61 :32-40.

28.Valko R. Clayton P. Depression in the internship. Dis Nerv Syst 1975: 36:26-9