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ORIGINAL ARTICLE

A STUDY OF DEPRESSION AMONG MEDICAL STUDENTS OF PRIVATE MEDICAL COLLEGE IN SOUTH INDIA

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ABSTRACT: CONTEXT: Medical Education in Private Medical Colleges is a great contributor to stress among the medical students & possibly even in developing syndromic depression among medical students which is an area of concern worldwide. The objective of this study is to assess the prevalence of depressive symptoms and its associate factors among medical students. **MATERIALS AND METHODS:** A cross sectional survey was conducted among 400 medical students from first to fourth year in Private Medical College of South India. Beck Depression Inventory-II was used to assess the level of depression with score of 10 or higher considered depressive. Association between depression and sex, year of study, medium of teaching in 10+2, social factors like alcohol & other substance abuse, family history of depression & family problems, hostel-stay etc. were analyzed by EPI info version 7. **RESULTS:** A total of 400 medical students participated in the study and the overall prevalence was found to be 64%. The prevalence of depression was higher (79%) among newly entered students (1st year) as compared to 2nd, 3rd and 4th year which was 60%, 57% and 53%, respectively. It was statistically significant (X^2=38.54, p=0.001252 with Yate's correction). Students who were facing language problem in their MBBS course, because English was not the medium of teaching in their 10+2, reported symptoms suggestive of depression (X^2=9.2091, p=0.0024). On the other hand students who undertook regular physical exercise were likely to suffer less depression (statistically significant, X^2=34, p=0.000). Students taking alcohol (X^2=8.315, p=0.00392) and with other substance abuse (X^2=6.277, p=0.01233) reported more symptoms suggestive of depression. There was no statistically significant difference in the prevalence of depression among students with family history and staying in hostel. **CONCLUSIONS:** Prevalence of depression is quite high in students of Private Medical College as revealed by this study. It is recommended that a screening may be carried out based on BDI-II scale at the end of first year and group counseling facilities by the Department of Psychiatry within the medical college should be made available to affected medical students to lead a healthier life.

KEYWORDS: Study, Depression, Medical Students, Private Medical College.

INTRODUCTION: Depression is highly common and according to WHO, by 2020, it would the second most prevalent condition worldwide.[1] WHO has also identified depressive disorder of adolescence as "priority mental health disorder". Globally its prevalence rate is 15-20% and recurrence rate is 60-70% whereas in India it is reported as 11.2%. However studies have reported that 50% of cases remain undiagnosed. Often adolescent depression leads to adult depression.[2] It is well accepted that medical students face a great stress in the course of their study because the workload is heavier than most other courses since a large syllabus is covered in a short period. MBBS course is extremely demanding in terms of student efforts.[3] There are three major areas of stress for medical students: academic-pressure, social-pressure and financial-problems.[4] While according to Olayinka in addition

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to above, stressors are associated with congested classroom, lack of laboratory equipment, family &health problems.[5] Early onset of depression among medical students interferes with psychological, social and academic functioning, placing him or her at greater risk for problems such as substance abuse and suicidal behavior.[6] Studies from other parts of world have shown a high prevalence of depression in medical students.[7,8] India has largest number of medical colleges with majority of the students in private medical colleges and studies of such nature will be more useful in addressing problems of depressed medical students in these institutions.

MATERIAL AND METHODS: This study is aimed at examining the depression and related demographic characteristic and contributing factors in medical students in Private Medical College of South India. Beck Depression Inventory Scale-II is used to assess degree of depression among medical students with a cutoff value 10 and above. A cross sectional study was conducted during Jan-Mar 2014 on most of medical students of the College with an annual intake of 150 students. The permission was obtained from Head of the Institution prior to survey. A total 400 students participated in study, representing 119 students from 1st year, 105 from 2nd year, 95 from 3rd year and 81 from 4th year.

Thus medical students were represented from each study-year. Data was gathered by an anonymous self-reporting-questionnaire which was distributed separately to each of the four years during an appropriate lecture period and answers were collected at the end of session. Students participated on a voluntary basis and informed consent was obtained from students after the aim and objective of study were explained to them. Content of the performa was explained and aim of study was told. They were assured confidentiality and given option to refuse to participate in study without any further implications. At the end of session students were asked to total their individual score and assess themselves against grades of depression.

Students were urged to report to Dept. of Community Medicine/Psychiatry voluntarily if they evaluated themselves with symptoms of depression. Total confidentiality was maintained in collection of socio-demographic details by avoiding any identification of the study subjects and leaving the choice of seeking help completely on them. Thus it is presumed that stigma was not a factor confounding the study.

The first section of the questionnaire focused on demographic items such age, sex, income of family, year of study, substance used in last six months, family history of depression or family problem, teaching medium in 10+2 & percentage of marks, if they undertook any exercise every week and staying away from home. The grades of depressive symptoms were measured using Beck Depression Inventory-ll.[9, 10]

This self-administered instrument has 21items on a 4 point-scale ranging from 0-3 and maximum score being 63. A score of 1-9 is considered as normal, 10-16 mild mood disturbances, 17-20 border line clinical depression, 21-30 moderate depression, 31-40 severe depression, over 40 as extreme depression.

Data entry and analysis was done on EPI info version 7. Descriptive analysis was performed to investigate the distribution of our data, Chi square test was used to test for association between depression and variables.

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RESULTS: Of the 400 medical students that participated in the study 164 (41%) were males and 236 (59%) were females. The overall prevalence of depression was found to be 64%. Among those in depression a majority 241 (60%) had mild to moderate degree of depression. The prevalence of severe and extreme depression was only 11 (3%) and 3 (1%) respectively. The present study showed that 64% (255) of the depressed were females 153 (60%) and 102 (40%) were males. According to the cut off scores 145 students (36%) scored as normal (0-9), 189 (46%) as mild (10-18), 52 (13%) as moderate (19-29), 11 (3%) as severe (30-40) and 3 (1%) as extreme depression (> 40) (See Table-1 and Figure-1).

		Male	Male%	Female	Female%	Total	Total %
Denial	0 to 4	38	44%	48	56%	86	22%
Normal	5 to 9	24	41%	35	59%	59	14%
Mild	10 to 18	75	40%	114	60%	189	47%
Moderate	19 to 29	22	42%	30	58%	52	13%
Severe	30 to 40	3	27%	8	73%	11	3%
V Severe	> 40	2	67%	1	33%	3	1%
X^2(Yate' s correction)=2.21, p=0.819							100%

Table 1: Study, Depression, Medical Students, Private Medical College

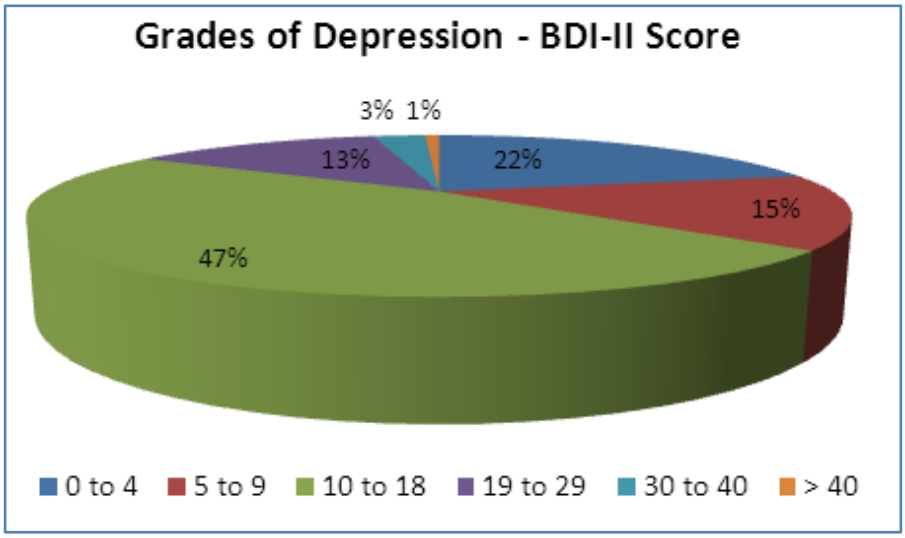

Figure 1

Table 2 shows grades of depression by year of study. The prevalence of depression was higher (79%) among newly entered students (1st year) as compared to 2nd, 3rd and 4th year which was 60%, 57% and 53%, respectively. The difference found between the grade of depression and year of studying was statistically significant (X^2=38.54, p=0.001252).

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	Grades of Depression	1st Year	2nd Year	3rd Year	4th Year	Total
Denial	0 to 4	13(15)	26(30)	24(28)	23(27)	86
Normal	5 to 9	12(20)	16(27)	16(27)	15(26)	59
Mild	10 to 18	56(30)	55(29)	44(23)	34(18)	189
Moderate	19 to 29	29(57)	7(13)	9(17)	7(13)	52
>severe	>30	9(65)	1(7)	2(14)	2(14)	14
X^2(Yate's correction)=38.54, p=0.0001252						

Table 2: Grades of Depression by Year of Study

Students who were facing language problem in their MBBS course, because English was not the medium of teaching in their 10+2, reported symptoms suggestive of depression and it was found to be significant (X^2=9.2091, p=0.0024). On the other hand students who undertook regular physical exercise were likely to suffer less depression and statistically significant (X^2=34, p=0.000). Students taking alcohol (X^2=8.315, p=0.00392) and with other substance abuse (X^2=6.277, p=0.01233) were more likely to report symptoms suggestive of depression. There was no significant association found between depression and higher percentage of marks obtained in 10+2. There was no statistically significant difference in the prevalence of depression among students with family history and staying in hostel (Table-3).

	Depressed	Not Depressed	Total
Studied in English Medium in 10+2	23	2	25
Non English Medium	232	143	375
	255	145	400
X^2=9.2091, p=0.0024, statistically significant			
Exercise	18	42	60
No Exercise	237	103	340
	255	145	400
X^2=34.793, p=0.000, statistically significant			
Taken alcohol	36	7	43
No Alcohol	219	138	357
	255	145	400
X^2=8.315, p=0.00392, statistically significant			
Substance abuse	18	2	20
No Substance abuse	237	143	380
	255	145	400
X^2=6.277, p=0.01223, statistically significant			
Family H/o Depression	14	3	17
No history	241	142	387
	255	145	400
X^2=2.6588, p=0.1029, statistically not significant			

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Staying in Hostel	250	137	387
Not in Hostel	5	8	13
	255	145	400
X^2=3.7183, p=0.0538, statistically not significant			

Table 3: Risk Factors Associated with Depression

DISCUSSION: A high prevalence rate of depression among medical students has been reported in last decade varying from 65.5% to 71.5 %.[7] In our study prevalence rate of depression was also found to be 64%.This study is consistent with the findings of survey carried out by private medical college in Pakistan. A study conducted on undergraduate Chinese medical students found nearly half of them were depressed with 2% having severe depression.[8] Study conducted at public sector medical college in Mumbai showed incidence of stress in 73.5% medical students.

Academic factors were perceived as major cause of stress. In recent years two studies have been carried out using Beck Depression Inventory to assess depression among medical students in India. There is wide difference in prevalence rates in these studies, since the Beck Depression Inventory is a subjective scale and different cut off for BDI-II score were used. Study conducted by Singh A, Lal A[11] has revealed depression in 49.1% medical students in which cut off for BDI score up to 16 was considered normal.

The latest study carried out by Kumar G S and Jain A et al[12] has shown overall prevalence of depression as 71.5% because of inclusion of mild degree of depression by lowering the cut off score to 9 while in our study also BDI-II score of 0-9 was taken as normal.

The prevalence of depressive symptoms was high among female students as compared to male students which are consistent with study conducted in Saudi Arabia,[13] in Canadian schools of medicine[14] and Karachi Pakistan.[15] This may be because of female students were reported to do less physical exercise than their male counterparts and regular exercise was negatively correlated with depression.[16] The other explanation for this observation may be due to the fact that women articulate depressive symptoms, even very minors ones, more easily than men.[16]

The prevalence rate of depression was also high among newly entered students (1styear) as compared to senior students. The reason might be due to stress of new study environments, change in eating and sleeping habits, greater degree of work load, desperation to succeed, lack of leisure time and homesickness. As the students gradually adopted the environments and study course the symptoms of depression were decreased in senior students.

Students using alcohol and other substance showed significant increases in depression. Yousafzai WA, Ahmer S et al[17] have found that a significant number of students consider substance abuse as a coping mechanism against stress and stress is positively correlated with development of depression in medical students. Since the study was conducted in a private medical college and the students mostly hailed from economically well-placed families, financial constraints did not appear in the data as significant.

CONCLUSION: Depression is an important and significant hidden problem in Indian medical students and prevalence is quite high as revealed by various studies including ours. The German BDI-II scale demonstrates good reliability and validity in clinical and non-clinical samples. The degree of severe and extreme depression is quite alarming and it may often result in lower academic performance,

behavioral problems and poor socialization.[18] Another important factor which could be responsible for high level of depression could be the subject's poor motivation for the medical course which demands lot of hard work and effort, while parents might have had pushed them in to it against their wishes.

We recommend that a screening be carried out based on BDI-II scale survey at the end of first year. Group counseling facilities, including close interaction with teaching and nonteaching staff and referral to the Psychiatry Department, when required, should be made available to affected medical students. This will help them overcome their difficulties and lead a healthier life. In long term it may help both, parents and students and also academicians to a great extent.

REFERENCES:

1. World Health Organization. Mental and neurological disorders. Fact sheet No. 265; 2001.
2. Basker M, Moses PD, Russell S, Russell PS. The psychometric properties of Beck Depression Inventory for adolescent depression in a primary care pediatric setting in India. Child Adolesc Psychiatry Mental Health 2007; 1:8.
3. Supe AN. A Study of stress in medical students at Seth G. S. Medical College. J Postgrad Med 1998; 44:1-6.
4. Morrison J. More on medical students stress. Medical Educ 2001; 35:617-618.
5. Olayinka O, Omigbodun A O, Omgbodun O, Odukogbe A et al. Stressors and psychological symptoms in students of medicine and allied health profession in Nigeria. Soc Psychiatry Psychiatr Epidemiol 2006; 41: 415-421.
6. Birmaher B, Ryan N D, Williamson D E, Brent D A. Childhood and adolescent depression. A review of the past 10 years, Part 1. J Am Acad Child adolesc Psychiatry 1996; 35:1427-39.
7. Inam S N B, Saqib A, Alam E. Prevalence of anxiety and depression among medical students of private university. J Pak Med Assoc 2003; 53:44-47.
8. Chan D W. Depressive symptoms and depressed mood among Chinese medical students in Hong Kong. Compr psychiatry 1991; 32:170-180.
9. Barrera M Jr, Garrison-Jones C V. Properties of Beck Depression Inventory as a screening instrument for adolescent depression. J Abnorm Child Psychol 1988; 16:263-73.
10. Kuhner C, Burger C, Keller F, Hautzinger M. Reliability and validity of the Revised Beck Depression Inventory (BDI-II). Nervenarzt 2007 Jun, Pubmed;78(6):651-6.
11. Singh A, Lal A, Shekhar. Prevalence of Depression among Medical Students of a Private Medical College in India. Online J Health Allied Scs. 2010; 9(4):813.
12. Kumar G S, Jain A, Hegde S. Prevalence of depression and its associated factors using Beck Depression Inventory among students in Karnataka. Indian J Psychiatry 2012; 54:223-6.
13. Inam S B. Anxiety and Depression among Students of a Medical College in Saudi Arabia. Int J Health Sci(Qassim). 2007Jul; 1(2): 295-300.
14. Toews J A, Lockyer J M, Dobsen D J, Simpson E et al. Analysis of stress levels among medical students. Residents, and graduate students at four Canadian school of medicine. Acad Med 1997 Nov; 72(11):997-1002.
15. Khan M S, Mahmood S et al. Prevalence of Depression, Anxiety and their associated factors among medical students in Karachi Pakistan. J Pak Med Assoc 2006; 56:583-586.
16. Noble R E. Depression in women. Metabolism. 2005; 54:49-52.

DOI: 10.14260/jemds/2014/2366

17. Yousafzai WA, Ahmer S, Syed E et al. Well-being of medical students and their awareness on substance misuse: a cross-sectional survey in Pakistan. Annals of General Psychiatry 2009; 8:8.
18. Lamerine R J. Child and adolescent depression. J Sch Health 1995; 65:390-3.

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