Original Research Article

A Cross Section Study on Depression in Undergraduate Medical Students of Two Medical Colleges of Gujarat, India

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ABSTRACT

Background: Medical profession is highly reputed and respected profession in community. Those students who cannot cop up with various stress factors become depressed. Consequences of depression last for longer time. It also affects social life, family life, and academic performance of students. Suicide is a lethal outcome of depression.

Objectives: To study prevalence of depression in undergraduate medical students of two medical colleges of Gujarat.

To identify psychosocial factors associated with depression in undergraduate medical students

Study design: A cross sectional study was carried out in classroom setting during June 2009 to December 2010

Material and methods: A cross sectional study was carried out at M.P Shah medical college Jamnagar and P.D.U medical college Rajkot during June 2009 to December 2010. Total 450 undergraduate medical students were selected for present study.150 undergraduate medical students each from 1st , 2nd and 3rd year were selected from both medical colleges (n=450). Centre for epidemiologic studies depression (CES-D) questionnaire was used to assess the prevalence of depression. Chi-square test (x^2) test was used as test of significance.

Result: Prevalence of depression in under graduate medical students was 3.78% (n=17). Prevalence of depression was four times higher in female students (7.32%) compare to male students (1.75%). Prevalence of depression was higher in first year students (5.33%). Conflicts in family, social problems, problems with friends, major stressful life event in last one year, substance abuse were identified as major factors associated with depression in undergraduate medical students.

Conclusion: Higher prevalence of depression in undergraduate medical students particularly in first year students shows urgent need of interventions and support system at entry level in medical education system.

Keywords: Adolescent, Depression, Medical Council of India (MCI)

INTRODUCTION

Medical profession is highly reputed and respected profession in community. Competition is very high to get medical education and even become more stressful during early stage of medical education. Adolescent age group students are more vulnerable for depression. Those students who cannot cop up with various stress factors i.e. excessive burden of study, longer study duration, very high level competition, adjustment problems to newer environment, get depressive mood. Undergraduate medical students start facing stress in very early age of their academic life which affects physical, psychological, academic and professional performance not only during academic time but throughout life. Suicide is a lethal outcome of depression and leading cause of death in adolescents worldwide.

Various studies reported higher prevalence of depression in medical students compare to general population. In study of Robertas Bunevicius et al found that prevalence of depression in medical students of Lithuania was 14%. [1] Dahlin et al in his study of stress and depression in medical students of Karolinska Institute Medical University Sweden found that prevalence of depression in medical students was 12.9%. [2] There are total 348 medical colleges in India and still increasing in number. [3] But very few studies have been conducted in the India to find prevalence of depression in medical students. So it is urgent need of time to study depression in medical students. Present study aimed to find out prevalence of depression and to identify psychosocial factors contributing to depression in undergraduate medical students.

MATERIAL AND METHOD

A cross sectional study was carried out in classroom setting during June 2009 to December 2010.Total sample size 450 was decided for the study. [4] A multi stage sampling technique was used. Out of total sample size, 300 under graduate medical students were selected from M.P.Shah Medical College Jamnagar and 150 students from P.D.U.Medical College, Rajkot.

Out of total selected 300 students from M.P.Shah Medical College 100 students each were selected from first, second, third year of M.B.B.S. 50 students each were selected from first, second, third year of M.B.B.S from P.D.U.medical college. Simple random sampling by lottery method was used for selection of individual sample. Total 150 students from first year, 150 from second year and 150 from third year M.B.B.S were selected from both medical colleges (n=450). M.P.Shah medical college and P.D.U. medical college are government medical colleges affiliated to the Shaurashtra University Rajkot. Both medical colleges were having medical council of India (MCI) recognized undergraduate intake capacity of 175 and 100 respectively for academic year 2009-10 and applied for increase of seats. Only those first year students were selected who had completed at least six or more months (minimum one semester) in first year. Socio demographic characteristics of student i.e. age, sex, academic year, education of parents, occupation of parents, family conflicts, social problems, addiction were collected by using self administered, semi structured questionnaire. Depression was evaluated using centre for epidemiologic studies depression (CES-D). [5] The score range is 0-60. A score of 16 or more is considered as depressed. The standard cut-score of 16 and above have sensitivity of 95% and specificity of 70% in predicting Major Depressive Disorder (MDD). Informed consent was taken and proper privacy and confidentiality was maintained. Epi Info version 3.2.2 was used for data analysis. Chi square test was used as test of

significance. Yates correction was applied where expected value of cell is less than 5 for chi square test. P value < 0.05 for two tailed test was considered significant.

RESULTS

The prevalence of depression in under graduate medical students was 3.78% (n=17). Gender difference regarding prevalence of depression was found showing prevalence of depression was more in female medical students (7.32%) in compare to male medical students (1.75%). It was noted that prevalence of depression was higher in first year students (5.33%) in compare to second year (2.67%) and third year students (3.33%).

Table 1. Sociodemographic characteristics of study participants and association with depression.

Variables		Depression		X^2	P
		Yes (%)	No (%)		
Age	<=18	3 (6.52)	43(93.48)	1.28	0.52
	19-21	9(3.85)	225(96.15)		
	>=22	5(2.94)	165(97.06)		
Sex	Male	5(1.75)	281(98.25)	7.43	0.006
	Female	12(7.32)	152(92.68)		
Academic year	First year	8(5.33)	142(94.67)	1.58	0.45
	Second year	4(2.67)	146(97.33)		
	Third year	5(3.33)	145(96.67)		
Type of family	Nuclear	12(4.41)	260(95.59)	0.95	0.62
	Joint	4(3.23)	120(96.77)		
	Three generation	1(1.85)	53(98.15)		
Socio-Economic class	Class I	5(5.37)	88(94.63)	1.45	0.83
	Class II	4(3.13)	124(96.87)		
	Class III	3(2.86)	102(97.14)		
	Class IV	4(4.76)	80(95.24)		
	Class V	1(2.50)	39(97.5)		
Education of mother	Illiterate	1(2.22)	44(97.78)	5.04	0.28
	Primary	3(7.14)	39(92.86)		
	Secondary	3(6.52)	43(93.48)		
	Higher secondary	1(0.94)	105(99.06)		
	Graduation or higher	9(4.27)	202(95.73)		
Education of father	Illiterate	1(14.28)	6(85.72)	2.37	0.66
	Primary	1(5.26)	18(94.74)		
	Secondary	1(2.86)	34(97.14))		
	Higher secondary	5(3.27)	148(96.73)		
	Graduation or higher	10(4.24)	226(95.76)		
Occupation of mother	House wife	4(1.45)	271(98.55)	8.92	0.002
	Working	13(7.43)	162(92.57)		
Occupation of father	Unemployed /Laborer /retired /	1(6.25)	15(93.75)	12.13	0.016
	Farmer	4(14.29)	24(85.71)		
	Government job	3(2.44)	120(95.56)		
	Private job	4(2.08)	188(97.92)		
	Business/others	6(6.59)	85(93.41)		

Prevalence of depression was more than five times higher in children of working mother (7.43%) than children of housewives (1.45%). Difference between prevalence of depression and working status of mother was statistically significant (p<0.01). The prevalence of depression was also significantly higher in students who were having conflicts in family (12.96%) compared to students who had good relationship in family (2.53%). Statistically significant difference between prevalence of depression and social problems faced by students was noted in present study (p<0.01).Students who had faced major stressful event like death of nearest one,

severe mental trauma in last one year were reported higher prevalence of depression (10.28%) compare to those who had not faced major stress in last one year (1.75%).

Difference between prevalence of depression and major stressful event within last one year found statistically significant (p< 0.001).

Table 2. Psychosocial factors and its association with depression.

Variables		Depression				x^2	p
		Yes	%	No	%		
Substance abuse	Yes	3	4.55	63	95.45	0.00	0.99
	No	14	3.65	370	96.35		
Family problems	Yes	7	12.96	47	87.04	11.52	0.0006
	No	10	2.53	386	97.47		
Social problems	Yes	7	11.67	53	88.33	9.48	0.002
	No	10	2.56	380	97.44		
Problems regarding Classmate/friends	Yes	6	19.35	25	80.65	17.86	0.0002
	No	11	2.63	408	97.37		
Problems regarding Teacher	Yes	2	6.90	27	93.10	0.17	0.68
	No	15	3.56	406	96.44		
Major Stressful life events in last one year	Yes	11	10.28	96	89.72	14.07	0.001
	No	6	1.75	337	98.25		
Financial problems	Yes	5	5.37	88	94.63	0.36	0.54
	No	12	3.36	345	96.64		
Lack of physical activities	Yes	3	14.28	18	85.72	2.40	0.12
	No	14	4.26	315	95.74		
Parental pressure for study	Yes	5	6.67	70	93.33	1.22	0.26
	No	12	3.20	363	96.80		

DISCUSSION

Depression onset is occurring earlier in life today than in past decades. Early onset depression often reoccurs and continues into adulthood. Medical professionals are at great risk of various mental health problems specifically depression due to stressful life style starting from admission in medical college to professional life. It is also very important to study depression because of its frequent recurrence throughout life and lethal outcome as suicide. Consequences of depression last for longer time and affect social life, family life, and academic performance of students. If depression not treated during student life it relapse in more severe form and some time becomes lethal. It is important to find out what factors contribute to depression in students and to consider depression as a contributing factor to poor academic performance, substance abuse and other problems.

This study found that the prevalence of depression in undergraduate medical students was 3.78%. Givens JL et al (2002) in his study reported that prevalence of depression in medical students was 24%.[6] In the study of Sherina MS et al (2003) noted that prevalence of depression was 35.9% in medical students of Malaysia[7] Robertas Bunevicius et al (2008) found that prevalence of depression in medical students of Lithuania was 14%.[1] Dahlin et al (2005) in his study of stress and depression in medical students of Karolinska Institute Medical University Sweden found that prevalence of depression was 12.9%.[2] Medical education is lengthy, highly competitive and frequent exams causing excessive stress to students. Those students who cannot cop up with stress become depressed. Similar findings were reported by others. [8-10]

Prevalence of depression was five times higher (7.32%) in female medical students compare to male medical students (1.75%).

Dahlin et al in his study found that prevalence of depression was 16.1% in female students versus 8.1% in male. [2] Gender differences could be caused by individual vulnerability and hormonal changes. One possible genetic explanation given by Nazroo & Edwards was x-linkage; that was, the position of the relevant locus on the X chromosome. "If the gene for depression is located in the X chromosome and the trait is dominant, females, who have two x chromosomes, will be more often affected than males, who have only one X chromosome". [11]

Prevalence of depression was highest in first year undergraduate medical students (5.33%) compare to third year students (3.33%) and second year students (2.67%). In the study of Mancevska S et al (2008) depression, anxiety and substance use in medical students of republic of Macedonia, found that prevalence of depression was higher in first year students (11.6%) than second year students (8.6%). [12] Sherina MS et al found that the prevalence of depression was highest among first year students (41.0%). [7] These study findings shows urgent need of intervention at entry level in medical education. Majority of students were from Guajarati medium facing language problems during first year. Problems related to adjustment in newer environment were also higher in first year students i.e. problems regarding hostel, mess, distance from parents. College students particularly first year students are most vulnerable to stress also due to the transitional nature of college life. They must adjust to being away from home, struggle with high level of academic competition and adjustment to new social environment. It was notable that harassment by seniors was also important factor causing excessive stress in beginning of medical education. It shows requirement of strict implementation of available legislation and urgent need of psychological counseling by psychiatrist to both ragging takers and victims.

A notable finding was that prevalence of depression was significantly higher in the student whose mother was working woman (7.43%) in compare to whose mother was house wife (1.45%). Moataz M. Abdel-Fattah et al (2004) reported that children with working mothers were more liable to develop emotional and/or behavioral disturbance than those with non working mothers. [13] It was found that separation from mother, feeling of loneliness and lack of attention towards child since childhood emerged as leading risk factors for depression. It also shows the importance of role of mother in development of good mental health of child. Prevalence of depression was higher in students living in nuclear family (4.41%) compare to joint family (3.23%) and three generation family (1.85%). The association between the different family types and prevalence of depression was not significant. Care and guidance regarding problems by elder family members in joint family makes students less vulnerable for depression. Problem sharing and solution of problem by all family members jointly in joint family are the key features of joint family.

In this study students who had poor relationship with their family members (12.96%) were significantly more depressed compare to students with good relationship with their family members (2.53%) (p <0.01). Similar finding was noted by Sherina MS et al in medical students of Malaysia.[7] Family is an important source of emotional, financial support and care to students. Students with healthy relationship with family members were less likely to develop depression due to a better level of support and care.

Prevalence of depression was also high in student having poor relationship with classmates or friends (19.35%) compare to

students having good relationship with classmates/friends (2.63%). Difference regarding relationship with classmates/ friends and prevalence of depression was statistically significant (p<0.001). Sherina MS et al also reported higher prevalence of depression in students having poor relationship with course mates (37.9%).[7] Friends are the major emotional support during study period and later on even during professional life it becomes more important when students living in hostel or away from home. Friends play very important role in various problems solving during young age group. Communication gap between friends for sharing problems or expressing emotions is also important risk factor for depression. It is important to express feelings, showing emotions, taking help and talk about various problems to cope up with stress factors. Students must develop stress coping skills to get them through an immediate conflict or problem.

Current scenario in India is not so depressing about depression in medical students. But even at present situation concrete plan to fight with depression at large scale is not developed. Depression is not only problem of medical students but it can occur to student of any branch with same risk factors identified in various studies. It is urgent need of time to have definite plan to cope up with depression in education system. Efforts should be started at entry level otherwise modern epidemic of depression will swamp them.

CONCLUSION

It is always very challenging for students to manage highest level competition in medical college along with other stressful conditions particularly during transition period like adolescent age. Gender difference regarding depression also required more emphasize from parents and medical college administrator also. Student counseling services which offer mental health assistance should be started and special attention should be given to depressed students.

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