STUDY OF DEPRESSION AMONG MEDICAL STUDENTS OF DIFFERENT PATHIES IN NANDED CITY, MAHARASHTRA.

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ABSTRACT: BACKGROUND: The goal of medical education is to train knowledgeable, competent and professional physicians to care for the nation's sick, advance the science of medicine and promote public health. It imposes significant psychological stress on medical students, mainly through time pressure, large amount of new information, excessive working hours and the knowledge that at the end of their training they will be directly responsible for the health and welfare of others. In this respect, attention has been paid to stress, health concerns and emotional problems among medical students. **AIM AND OBJECTIVES:** 1) To determine prevalence of depression among medical students. 2) To study contributing risk factors for development of depression. **MATERIAL AND METHOD:** A Cross sectional study was conducted from June 2012 to Nov 2012 at Dr. Shankarrao Chavan Govt. Medical College, Nanded and Government Ayurvedic College, Nanded. All the 450 medical students of both government medical colleges were included in study. Data was collected using pretested semi structured questionnaire including Becks depression inventory scale. **STATISTICAL ANALYSIS:** Data analysed using SPSS version 16. Proportion and Chi square test were used. **RESULTS:** A total of 421 students participated with response rate of (93.56%). The prevalence of depression according to Becks Depression Inventory Scale among medical students was (27.08%). Majority (16.63%) had mild depression followed by (8.08%) with moderate depression, (1.43%) with severe depression and (0.95%) with very severe depression. There were statistically significant association between type of depression and faculty of medical science of study subjects ($p < 0.05$). Year of under-graduation, religion, parental loss, family h/o chronic illness and h/o unsuccessful love affairs were the factors significantly associated with depression. ($p < 0.05$).

CONCLUSIONS: About one fourth of medical students were suffering from mild depression. Along with academic factors certain socio – demographic and family related factors were significantly associated with depression among study subjects.

KEY WORDS: Depression, Becks depression inventory scale, Medical students.

INTRODUCTION: A depressive disorder is an illness that involves the body, mood, and thoughts. It affects the way a person eats and sleeps, the way one feels about oneself, and the way one thinks about things. ^[1]

Depression is an important health problem due to its prevalence and associated consequences. The lifetime prevalence of depression ranges between 10 to 21% in population. ^[2] Depression is widespread globally affecting around 151.2 million of the population. It is among the third most common cause of disability and is anticipated to form the top most cause worldwide by 2030. Worldwide possibility of developing depression is 7- 12 % for men and 20-25 % for women. These rates are independent of race, education, earnings, or social status. ^[3]

Stress, health concerns and emotional problems among medical students has been the subject of recent research.^[4] Medical Schools and colleges are recognized as a stressful environment that often exerts a negative effect on physical health, and psychological well being of the students. ^[1]

Students are subjected to different kind of stresses, such as pressure of academics with an obligation to succeed and an uncertain future. The students also face social, emotional, physical and family problems which may affect their learning ability and academic performances. ^[5] Perceived stress is associated with increased levels of depression, drug abuse, relationship difficulties, anxiety and suicide. Moreover, tired, tense and anxious doctors will not provide as high a quality of care as do those who do not suffer from these conditions. ^[4]

The goal of medical education is to train knowledgeable, competent and professional physicians to care for the nation's sick, advance the science of medicine and promote public health. Medical school can impose significant psychological stress on medical students, mainly through time pressure, large amount of new information, excessive working hours and the knowledge that at the end of their training they will be directly responsible for the health and welfare of others and their post matriculation. ^[6]

There is considerable evidence that rates of depression and suicide are higher in medical students and that these rates continue to remain elevated when these students become physicians. Medical students are a valuable human resource for our future and depression in them leads to less productivity, reduced quality of life, learning difficulties and may negatively affect patient care. Studies from other parts of world have shown a high prevalence of depression in medical students but studies on Indian medical students are lacking. ^[7] Hence, there is a need to quantify the depression and its associated factors among medical students for their counseling and rehabilitation.

AIM & OBJECTIVES:

- 1) To determine prevalence of depression among medical students.
- 2) To study risk factors associated with depression among medical students.

MATERIAL AND METHODS:

Study design: cross sectional descriptive study.

Study period: The study was conducted over the period of 5 months during July to November 2012.

Study site and population: Nanded is the second largest urban area in the Marathwada region, after Aurangabad in Maharashtra state. There are three medical colleges in the Nanded city, Dr. Shankarrao Chavan Govt. medical College, Govt. Ayurvedic College, and Homeopathic Medical College, Hospital & Research Centre of which, two medical colleges, Dr. Shankarrao Chavan Govt. medical College, (MBBS) and Govt. Ayurvedic College, (BAMS) were selected for convenience of data

collection. The total student strength of Dr. Shankarrao Chavan Govt. medical College was 250 and Govt. Ayurvedic College was 200. All 450 undergraduate medical students from first year to final year and interns in both selected medical colleges were included into the study. In the case of the students who were absent at the time of first session, mop up round was undertaken to cover the remaining subjects.

Inclusion criteria: All medical students from first year to final year and interneers were included in the study.

Exclusion criteria: Medical students not giving voluntary consent to participate in the study were excluded from study.

Data collection: The subjects were clearly told about the aims and objectives of the study. They were requested to fill the questionnaire with full assurance about the confidentiality and anonymity of their information. The subjects were assured that the data would be used only for scientific purpose of the study. Informed consent was obtained from the study subjects. The students were asked to complete the questionnaire in a class at the end of lecture and returned them to author in the same session.

A self-administrated questionnaire was utilized including information regarding socio demographic characteristics, history of psychiatric illness, family history of psychiatric illness, chronic diseases, parental loss, as well as history of addictions. Information regarding reason of choosing medical profession and expectation from it was also collected.

The Becks Depression Inventory Scale [8], has been used for screening of depression among the study population. It is a 21-item self-reported measure, and one of the most widely used screening instruments for detecting symptoms of depression. It can be administered to assess normal adults, adolescents, and individuals with psychiatric disorders (>13 years of age). It was designed to document a variety of depressive symptoms the individual experienced over the preceding week. Responses to the 21 items are made on a 4-point scale, ranging from 0 to 3 (total scores can range from 0 to 63).

Study subjects with BDI score 10 and more were classified as depressed and 9 or less were classified as normal. Depressed individuals were further classified as mild (BDI score 10 – 18), moderate (BDI score 19 – 29), severe (BDI score 30 – 40) and very severe (BDI score > 40)

Statistical analysis: Data was entered into SPSS 16 software and analyzed using proportions and chi square test.

RESULTS: A total of 421 students among all 450 students participated in the study with response rate of (93.56%). Majority 214(50.83%) students were 21 – 24 years age group, 225(53.44%) were female, 97(23.04%) were interneers, 303(71.97%) were Hindu by religion, 333(79.1%) were from nuclear family. Among 421 students, 191(45.37%) students had father graduate and 154(36.58%) mother with secondary education, 149(35.39%) belong to socioeconomic class IV. 12(2.85%) students had parental loss, 09(2.14%) had family h/o psychiatric illness, 39(9.26%) had family h/o chronic illness, 32(7.6%) were smokers and 33(7.84%) were alcoholic, 42(9.98%) had unsuccessful love affairs.

The prevalence of depression according to Becks Depression Inventory Scale among medical students was 114(27.08%). Majority 70(16.63%) had mild depression followed by 34(8.08%) with moderate depression, 6(1.43%) with severe depression and 4(0.95%) with very severe depression.

Among 92 first year medical students, 73(79.35%) had depression. Among 94 second year medical students 59(62.77%) had depression. Among 92 third year medical students, 30(65.22%) had depression. Among 97 interns, 72(74.23%) had depression. The proportions of medical students with depression were significantly associated with years of under graduation. ($p < 0.05$)

Among 70 medical students with mild depression, 29(41.43%) were from Govt. Ayurvedic Colleges. Among 34 medical students with moderate depression 8(23.53%) were from Govt. Ayurvedic Colleges. Among 6 severely depressed medical students 5(83.33%) Govt. Ayurvedic College. The proportion of medical students with different grade of depression was significantly associated with faculty of medical sciences. ($p < 0.05$)

There was no significant association between age, sex, socioeconomic status, parental education, family history of psychiatric illness, history of smoking and history of alcohol intake by medical students with depression.

Among 303 Hindu medical students, 69(22.77%) had depression while among 69 Muslim medical students 27(39.13%) had depression. The proportion of medical students with depression was significantly associated with their religion. Among 409 medical students with no parental loss, 107(26.16%) had depression and among 12 medical students with parental loss, 7(58.33%) were depressed. The proportions of medical students with depression were significantly associated with history of parental loss. Among 39 medical students with family history of chronic illness, 16(41.03%) had depression while among 382 medical students with no family history of chronic illness, 98(25.65%) had depression. The proportions of medical students with depression were significantly associated with family history of chronic illness. Among 41 medical students with unsuccessful love affairs, 18(43.9%) had depression while among 379 medical students with no unsuccessful love affairs, 96(25.33%) had depression. The proportions of medical students with depression were significantly associated with history of unsuccessful love affairs.

Most common reason behind choosing medical profession among medical student was ideal of being doctor 291(69.12%). Most common expectation of students from medical profession was occupational satisfaction 226(53.68%).

DISCUSSION: Medical institutions have long been recognized as involving numerous stressors that can affect the well-being of students. As per the Becks Depression Inventory Scale, the present study reveals prevalence of depression among medical students as 27.08%. This prevalence seems to be high among medical students, which tends to affect not only their academic performances but also all aspects of health; the similar findings were also noted by N. Karaoglu et. al.(29.3%)^[6], Surabhi Sidana et. al. (21.5%)^[9] and F. Rab et. al. (19.5%)^[10], while Yoolwon Jeong et. al. (37.1%)^[11], A.K. Khuwaja et. al. (39%)^[13] reported still higher prevalence than the present study.

Majority of the students i.e. 70(16.63%) had mild depression followed by 34(8.08%) with moderate depression and 6(1.43%) with severe depression. In study conducted by Thomas L. Schwenk et. al. ^[14] 51.29% had no depression, 29.5% had mild depression and 14.26% had moderate to severe depression. The depression level in medical students is increased during academic examination and the label “academic examination stress” covers a wide range of situations that may have very different psychological consequences. On the contrary, Aisha Yusuf et. al.^[3] found that 40.12% medical students had no depression, while 38.95% had mild and 20.93% had moderate

depression. Ajit singh et. al. [15] found 64.8% medical students with mild depression, 27.8% with moderate and 7.4% with severe depression.

The proportions of medical students with depression were significantly associated with years of under graduation. Stress levels increase as students advance in their medical college years. According to our study, there was a higher rate of depression among 2nd and final year medical students compared with 1st to 3rd year students. Higher levels of stress have also been reported in the study of S. N. Bazami Inam et. al. [16], Surabhi Sidana et. al. [9], S.N.B. Inam et. al. [17], while F. Rab [10] found no significant association between depression and year of under graduation.

In our study we correlated certain risk factors such as age, gender, year of study, substance abuse, depression in family. In present study, there was no significant association between age, sex, socioeconomic status, parental education, family history of psychiatric illness, history of smoking and history of alcohol intake by medical students with depression. Similar results were noted by Ajit singh et. al. [15], Numan Arif et. al. [18], and Yoolwon Jeong et. al. [11]. Surabhi Sidana et. al. [9] while Thomas L. Schwenk et. al. [14], N. Karoglu et. al. [6], A.K. Khuwaja et. al. [13] found significant association between sex of medical students and depression.

In present study, there was significant association between religion, history of parental loss, family history of chronic illness and depression among medical students. Similar results were seen in the study conducted by Aisha Yusuf et. al. [3] who found significant association between religion of medical students and depression. F. Rab et. al. [10] and Muhammad S. Khan et. al. [1] found significant association between history of parental loss and depression. Muhammad S. Khan et. al. [1] also found significant association between family history of chronic illness and depression.

The most common reason behind choosing medical profession as a career among medical student was ideal of being doctor i.e. 291(69.12%). The most common expectation of students from medical profession was occupational satisfaction i.e. 226(53.68%). In contrast, N. Karagolu et. al. [6] found that majority of women (49%) chosen medical profession for occupational guarantee and expect prestige (71%) from medical profession. Study claims that the main “filter” which defines who will enter medical school, is not the medical college admission process but rather an individual’s decision to apply for admission. Medical faculty preference is the first sign of desire for medicine.

CONCLUSION: About one fourth of medical students were suffering from depression. Majority had mild depression. Along with academic factors certain socio – demographic and family related factors were significantly associated with depression among study subjects.

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Table 1: Socio-demographic profile of study subjects: (n = 421)

Characteristics		No of students (%)
		169(40.14)
	21 – 24	214(50.83)
	25 – 28	38(9.03)
Sex	Female	225(53.44)
	Male	196(46.56)
Yrs of under graduation	1 st yr	92(21.85)
	2 nd yr	94(22.33)
	3 rd yr	92(21.85)
	4 th yr	46(10.93)
	Internee	97(23.04)
Religion	Buddhist	39(9.26)
	Hindu	303(71.97)
	Muslim	69(16.39)
	Others	10(2.38)
Type of family	Nuclear	333(79.1)
	Three generation	26(6.18)
	Joint	62(14.73)

Table 2: Prevalence of depression among medical students (n = 421)

Type of depression	No. of medical students (%)
No depression (0 – 9)	307(72.92)
Mild depression (10 – 18)	70(16.63)
Moderate depression (19 – 29)	34(8.08)
Severe depression (30 – 40)	06(1.43)
Very severe depression (> 40)	04(0.95)
Total	421(100)

Table 3: Association between type of depression and faculty of medical education (n = 421) (BDI Scale)

Types of depression	BAMS (%)	MBBS (%)	Total (%)
Mild (10 – 18)	41(58.57)	29(41.43)	70(100)
Moderate (19 – 29)	08(23.53)	26(76.47)	34(100)
Severe (30 – 40)	05(83.33)	01(16.67)	06(100)
Very severe (> 40)	02(50)	02(50)	04(100)
Total	56(49.12)	58(50.88)	114(100)

($\chi^2 = 14.22$, df = 3, p = 0.0026)

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Table 4: Association between year of under graduation and depression among medical students

Year of under graduation	Depression		Total (%)
	Present	Absent	
I	19(20.65)	73(79.35)	92(100)
II	35(37.23)	59(62.77)	94(100)
III	19 (20.65)	73(79.35)	92(100)
IV	16(34.78)	30(65.22)	46(100)
Internee	25(25.77)	72(74.23)	97(100)
Total	114(27.08)	307(72.92)	421(100)

(χ^2 – 10.22, df – 4, p – 0.0368)

Table 5: Socio demographic risk factors for depression (n = 421)

Risk factors		Depression (BDI score)		P value
		Absent (≤ 9)	Present (≥ 10)	
Course	BAMS	130(69.89)	56(30.11)	0.2134
	MBBS	177(75.32)	58(24.68)	
Age (yrs)	17 – 20	122(72.19)	47(27.81)	0.2568
	21 – 24	153(71.50)	61(28.50)	
	>25	32(84.21)	6(15.79)	
Sex	Female	162(72)	63(28)	0.6484
	Male	145(73.98)	51(26.02)	
Religion	Buddha	24(61.54)	15(38.46)	0.0146
	Hindu	234(77.23)	69(22.77)	
	Muslim	42(60.87)	27(39.13)	
	Other	07(70)	03(30)	
	Post graduate	7(53.85)	6(46.15)	
Parental loss	Yes	5(41.67)	7(58.33)	0.01
	No	302(73.84)	107(26.16)	
Family h/o psychiatric illness	Yes	4(44.44)	5(55.56)	0.0520
	No	303(73.18)	109(26.32)	
Family h/o chronic illness	Yes	23(58.97)	16(41.03)	0.03
	No	284(74.35)	98(25.65)	
Unsuccessful Love affairs	Yes	24(56.1)	18(43.9)	0.0153
	No	283(74.67)	96(25.33)	

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Table 6: Distribution of reasons behind choosing medical profession (n = 421)

Reasons of choosing medical education	No. of students (%)
Occupational guarantee	127(30.17)
External pressure	29(6.89)
Ideal of being doctor	291(69.12)

(Multiple responses)

Table 7: Distribution of students as per their expectations from medical profession (n = 421)

Expectation from medical education	No. of students (%)
Prestige	151(35.87)
Better economy	99(23.52)
Occupational satisfaction	226(53.68)