



Study of Depression, Anxiety and Stress among Undergraduate Medical Students of a Teaching Medical Institution

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ABSTRACT

Background: The global prevalence of mental and behavioral disorders among the adult population is estimated to be 10% and contributed to four of the ten leading causes of disability. Psychological distress has a negative impact on student abilities and worst outcome may result in development of behavioral problems.

Aims & Objectives: To assess levels of depression, anxiety and stress among the medical students and study their socio demographic variables.

Methodology: This cross sectional study was conducted among the complete batch of VII semester medical students (101) posted in the department during August 2016 to January 2017 with a pre-designed, pre tested, semi-structured questionnaire consisting of 2 parts: socio demographic details and DASS 21 (Depression Anxiety and Stress Scale) after taking their valid informed consent and Institutional Ethical Committee approval.

Findings: Out of 101 students, 58 were males and 43 were females with a mean age of 21.03 ± 0.96 years. Anxiety was more prevalent compared to depression and stress and male students showed a higher preponderance to anxiety than female students.

Conclusion: Students were more anxious than depressed or stressed. Male students were more affected than female students.

Keywords: Medical students, DASS 21

INTRODUCTION

Depression can lead to suicide. Over 8 lac people die due to suicide every year and is the second leading cause of death amongst 15-29 years old globally.¹ The global prevalence of mental and behavioural disorders among the adult population is estimated to be 10% and contributed to four of the ten leading causes of disability, with one in four families suffering the burden. It is estimated that by 2020, 15% of the disability-adjusted life-years (DALYs) lost would be due to mental and behavioural disorders, up from 10% in 1990 and 12% in 2000.²

Stress and medical school are intricately related with a tendency of being under diagnosed. The environment and social structure of a student also

determine the increased risk to developing psychological distress. Hence, this study is an attempt to find out level of depression, stress and anxiety among medical students.

Previous studies have revealed a rate of psychological distress among medical students ranging from 21.6 to 50%.³ One in five students strongly felt the need to conceal mental or emotional problems. Following fears were there- discrimination, stigmatization, breach in privacy & stigmatization, embarrassment etc.⁴ Psychological distress among medical students was associated with anxiety and depression, interpersonal conflict, sleeping problems, and lower academic and clinical performance. Also, it has a negative impact on students' abilities to develop a rapport with patients, to concentrate and focus on their training, and to make

decisions, which in turn may lead to dissatisfaction during their clinical practice later on⁴ or development of behavioural problems like suicide, drug abuse, and / abuse of alcohol.⁵Ganguli HC⁶ reported prevalence of depression as 34/1000 and anxiety 16/1000 in India. A study by Salt and colleagues⁷, reported that Harvard and Tufts medical students showed an increase in depression from 13% at the beginning of medical school, to 24.5% by the end of the second year.

The present study was conducted to find levels of depression, anxiety and stress among the medical students and to study their socio demographic variables.

METHODOLOGY

This cross sectional study was carried out on the complete batch of VII semester (101 students) posted in the department from August 2016 to January 2017.The Institutional ethics committee approval was obtained and valid informed consent from the participants was taken. A pre designed, pre tested, semi structured questionnaire was used, covering their socio demographic variables like age, sex, housing, food habits etc. and DASS 21 (Depression Anxiety and Stress Scale)The DASS-21 questionnaire categorizes each condition into five subcategories, namely, normal, mild, moderate, severe, and extremely severe.⁵All the three scores would be added as follows:

DASS 21 questionnaire categorization on the basis of scores:

Category	Depression	Anxiety	Stress
Normal	0-4	0-3	0-7
Mild	5-6	4-5	8-9
Moderate	7-10	6-7	10-12
Severe	11-13	8-9	13-16
Extremely severe	14+	10+	17+

Each question was scored from 0 to 3.If a student scored >14 for depression,>10 for anxiety and > 19 for stress, they were referred for further counselling.

Statistics: The data were analyzed with SPSSv20.0 software (IBM Corp., Armonk, NY).Chi square test was used wherever applicable.

RESULTS

Out of 101 students 58 (57.4%) were males and 43(42.6%) were females with a mean age 21.03±0.96years. Table 1:Majority of the students(85%) took admission through the state quota while 15% came from the All India quota of Pre medical entrance .Majority of the students

(80%)belonged to small/ nuclear families i.e. had a family size of less than 5 while only 20% had large/joint families i.e. family size of more than 6.On using the B G Prasad Scale ^{8,9}we observed that majority(85%) of students belonged to upper class families while only 15% belonged to upper middle class, middle class ,lower middle class and lower class. More than half of them were hostellers (55%),only 1/3rd(38%) of them took more than 30 minutes to commute, almost half of them used public transport (44%)or either walked (45%)to college, half of them (51%)were non vegetarians ,almost half (47%)got lunch from home. Around half of them (40%) exercise and participated in sports (51%) regularly. Nearly half of them (44%) of them spent>100Rs/-per day.

The respondents whose score was moderate/ severe/ extremely severe were referred for further counseling. Overall, 34% were depressed,35% were anxious and 15% were stressed.

Table 1: Distribution of participants for socio demographic and other variables

Variable	Frequency (%)
Admission for MBBS Course through	
All India quota	15(14.8)
Maharashtra CET	86(85.1)
Family size	
< 5 members	81(80.1)
>6 members	20(19.8)
Socio economic status (B. G. Prasad)	
Class I	86(85.1)
Class II to V	15(14.8)
Residence	
Hostelite	56(55.4)
Localite	45(44.5)
Mode of commute to college	
Walking	45(44.5)
Personal vehicle	12(11.8)
Public transport	44(43.5)
Time taken to commute to college	
<30 minutes	63(62.3)
>30 minutes	38(37.6)
Dietary preference	
Vegetarian	36(35.6)
Ovo vegetarian	13(12.8)
Non vegetarian	52(51.4)
Source of lunch	
Home made	47(46.5)
Dabba	33(32.6)
Others	21(20.7)
Exercise regularly	
Yes	40(39.6)
No	61(60.3)
Participation in sports	
Yes	52(51.4)
No	49(48.5)
Money spent every day (Rs./- per day)	
>100	44(43.5)
< 100	57(56.4)

Table 2: Association of Depression with relationship status, fruits and junk food consumption:

Variable	Depression		Total P value
	Present (%)	Absent (%)	
Sex			
Male	21(20.8)	38 (37.6)	59 0.313
Female	13(12.9)	29(28.7)	42
Relationship status			
Single	27(26.7)	55(54.5)	82 0.372
Committed	7(6.9)	12(11.9)	19
Consumption of fruits			
< 2 times/week	17(16.8)	45(44.5)	62 0.123
> 3 times/week	15(14.8)	24(23.8)	39
Consumption of junk food			
Yes	32(31.7)	64(63.4)	96 0.429*
No	2(2.0)	3(3.0)	5

* Yates correction; p <0.05 indicate non significance

Table 3: Association of anxiety with relationship status, fruits and junk food consumption

Variable	Anxiety		Total P value
	Present (%)	Absent (%)	
Sex			
Male	22(21.8)	36(35.6)	58 0.21
Female	13(12.9)	30(29.7)	43
Relationship status			
Single	30(29.7)	52(51.5)	82 0.20
Committed	5 (5.0)	14(13.9)	19
Consumption of fruits			
< 2 times/week	21(20.8)	41(40.6)	62 0.42
> 3 times/week	14(13.9)	25(24.8)	39
Consumption of junk food			
Yes	33(32.7)	63(62.4)	96 0.41*
No	2 (2.0)	3(3.0)	5

* Yates correction; p <0.05 indicate non significance

Table 4: Association of stress with relationship status, fruits and junk food consumption

Variable	Stress		Total P value
	Present (%)	Absent (%)	
Sex			
Male	9 (8.9)	49 (48.5)	58 0.41
Female	6 (5.9)	37 (36.6)	43 NS
Relationship status			
Single	11 (10.9)	71 (70.3)	82 0.31*
Committed	4 (4.0)	15 (14.8)	19
Consumption of fruits			
< 2 times/week	10 (9.9)	52 (51.5)	62 0.32
> 3 times/week	5 (5.0)	24 (23.8)	39
Consumption of junk food			
Yes	15 (14.8)	81 (80.2)	96 0.38*
No	0 (0)	5 (5.0)	5

* Yates correction; p <0.05 indicate non significance

Table 2: There was no statistical association of depression with relationship status, fruit consumption or junk food consumption.

Table 3: There was no statistical association of anxiety with any of the variables considered in this study. But out of 82 who were single (with respect

to relationship status), 37% were observed to be anxious while out of 19 committed, 26 % were anxious.

Table 4: There was no statistical association of stress with any of the variables considered in this study. But, out of 82 who were single, 13% were observed to be stressed while out of 19 committed, 21 % were stressed.

Table 5: Distribution level of depression, anxiety and stress (based on DASS 21 questionnaire)

Levels	Depression (%)	Anxiety (%)	Stress (%)
Normal	42(41.5)	36(35.6)	69(68.3)
Mild	25(24.7)	30(29.7)	17(16.8)
Moderate	25(24.7)	17(16.8)	10(9.9)
Severe	3(2.9)	6(5.9)	4(3.9)
Extremely Severe	6(5.9)	12(11.8)	1(0.9)

DISCUSSION

We observed 9% of students to be depressed, 18% to be anxious and 5 % to be stressed. A study by Iqbal et al¹⁰ found 17.5% students had severe or extremely severe depression, 33.4% had anxiety and 13.1 % had stress. The mean scores of depression and stress for all students were found to be at mild level and the scores of anxiety at moderate level. Moutinho et al¹¹ found 8.8% had depression, 12.2% had anxiety and 17.4% had stress while Sumaya Basudan et al. observed abnormal levels of depression, anxiety and stress were observed in 55.9%, 66.8% and 54.7% of the respondents¹².

Mehta P et al⁴ study observed that 10% were depressed, 23% were anxious and 5 % were stressed. Higher scores of depression, anxiety and stress were associated with female gender, lower semester, younger age and non-smokers. Shendarkar¹³ observed that anxiety was associated with feeling of loneliness, peer competition, long hours and loss of social time. Helmers et al found out that medical student were not untowardly stressed but the transition of basic to clinical training was associated with stress¹³.

Shendarkar¹³ found that independent living was found out to be an important factor for stress origin. Hostelites were susceptible to stress according to a study in Nepal¹⁴, while females were more prone to stress in a study by Waghachavare¹⁵. Nationality, marital status, residence state, and smoking status did not appear to significantly affect the probability of being psychologically distressed^{16,17}. Arab M et al found correlation of depression, anxiety and stress with happiness¹⁸. Low self-esteem, pessimism about oneself and poor academic performance are undeniably the factors,

which are interlinked to each other are the reason for the psychological disturbances as well¹⁹.

Likely reasons for depression were change in cultural background as hailing from different parts of Maharashtra, parental pressure for medical admission, high expectations from parents, inadequate time management, losing interest in academics, personal issues etc. The plausible reasons for stress were vast syllabus, demanding curriculum, multiple parallel postings and / lecture series and exams, academic performance etc. The probable reasons that the singles were anxious were looks, personality and academic performance. Likely reasons for committed being less anxious were companionship and satisfaction in their personal lives. The plausible reasons for stress were vast syllabus, demanding curriculum, multiple parallel postings and / lecture series and exams, academic performance, etc.

Conclusion: This cross sectional study indicated 25 %, 17% and 9% of moderate level of depression, anxiety and stress respectively. There was 9%, 18% and 5% of severe level of depression, anxiety and stress respectively among the study participants. Students were more anxious than stressed or depressed. Also, males were more affected than their female counterparts. Relationship status, fruits consumption and junk food consumption were not affecting their depression, anxiety or stress.

The variables studied were not statistically significant with DASS, this indicates a need to study other variables which are affecting depression, anxiety and stress. Early screening and subsequent interventions for behavioral problems should be promoted among the medical students.

We recommend some of the measures like staying healthy, forming a study group, maintaining a close group of friend, engaging in social activities, participating in extracurricular events etc.

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