Assessment of mental health in medical students of GMERS Medical College, Patan, Gujarat

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ABSTRACT

Background: Medical students are more likely to developmental disorders such as anxiety disorders, major depressive disorder, and psychiatric comorbidity as compared to other students. Mental distress can lead to poor classroom performance, poor communication, and frequent medical errors, burnout, social isolation, suicidal thoughts, substance abuse, cynicism, and harm to self and others. An active coping approach such as positive framing, talking to friends, family member, leisure activities, and sport activities can reduce stress level. **Objectives:** The objectives of the study were (a) to find out the prevalence of depression, anxiety, and stress among medical students and (b) to assess risk factors for emotional distress. **Materials and Methods:** This study was conducted among 530 MBBS student of Gujarat Medical Education and Research Society Medical College, Patan during October 2018–March 2019 after the Institutional Ethical Committee permission. A Depression Anxiety Stress Scale-21 was used to collect data on depression, anxiety, and stress. Other information such as sociodemographic, academic profile, and personal characteristics of students were collected. **Results:** The prevalence of depression, anxiety, and stress was 10.5%, 33.6%, and 38.3%, respectively, in medical students. The risk factors for emotional distress were female gender, residing at home, nuclear family, addiction, poor academic performance, less extracurricular activities, and positive family history. Joint family and strong relationship with friends were found protective against emotional distress. The prevalence of any emotional state was not affected by the number of supplementary exams, personal choice to join MBBS, and personal satisfaction with body image and life. **Conclusion:** Anxiety and depression are significant hidden problems in medical students. Substance abuse, less extracurricular activities, poor relationship with friends, and positive family history are risk factors for depression. Therefore, these risk factors should be identified and interventions to reduce stress should be carried out.

KEY WORDS: Anxiety; Addiction; Depression; Stress

INTRODUCTION

Knowledge, professional skills acquired by medical students, is greater than other students.[1] They face additional challenges such as long study and working hours, extensive course content, academic performance pressure, peer competition, heavy workload, time commitment, and the pressures of a clinical environment.[2,3] Therefore, emotional disturbances and stress levels are high among medical students. The medical curriculum may contribute to the high prevalence of emotional distress, and it may not be conducive to maintain healthy psychological states.[4] They are more likely to developmental disorders such as anxiety disorders, major depressive disorder, and psychiatric comorbidity as compared to other students and general population.[5,6] Improvement of certain aspects of mental health has been observed as students become residents and early career physicians.[7]

The various study reported that nearly half of Indian medical students are suffering from depression.[8,9] Mental distress can lead to poor classroom performance, poor communication, frequent medical errors, burnout, social isolation, suicidal thoughts, substance abuse, cynicism, and harm to self and others.[10,11] Sometimes, mental disorders in medical students are underdiagnosed due to stigma.[12] An active coping approach such as positive framing, talking to friends, family member, leisure activities, and sport activities can reduce stress level.[13,14]

This study was undertaken with objectives to find out the prevalence of emotional distress such as depression, anxiety, and stress among medical students and assess the risk factors for the same.

MATERIALS AND METHODS

This cross-sectional study was conducted among MBBS student of Gujarat Medical Education and Research Society (GMERS) Medical College, Patan, during October 2018–March 2019 after the Institutional Ethical Committee permission. A total of 530 students were enrolled in the study. They were informed about the objectives and voluntary nature of study participation. A depression anxiety and stress scale (DASS-21 was used to collect data on depression, anxiety, and stress.[15] DASS (21 items) is a short scale which assesses depression, anxiety, and stress, and each domain contain seven items. The depression scale assesses hopelessness, dysphoria, devaluation of life, self-deprecation, lack of involvement, inertia, and anhedonia. The anxiety scale assesses skeletal muscle effects, autonomic arousal, situational anxiety, and subjective experience of anxious affect. The stress scale assesses nervous arousal, difficulty relaxing and being easily agitated, over-reactive, and impatient. This scale has four points to rate the extent of severity. Did not apply at all =0, some degree or some of the time =1, a considerable degree or a good part of time =2; and very much or most of the time =3. Scores for depression, anxiety, and stress are calculated by summing all relevant scores. Other information such as sociodemographic, academic profile, and personal characteristics of students were collected. Self-assessment of ability to cope with syllabus and academic performance was assessed on a scale of 1–10 points. Pilot study was done to test the questionnaire among 60 interns of the institute.

Statistical Analysis

The data were entered into "Microsoft Excel" and analyzed using the Epi-info 7. Qualitative variables were described in frequency and percentages. Comparison between qualitative variables was done by Chi-square test. $P < 0.05$ was considered significant.

RESULTS

A total of 530 students from all academic year participated in the present study. Male and female proportions were nearly equal. Majority of the students (78.3%) were residing in the hostel. Half of the students (257, 48.5%) were having at least one sibling and 57.4% students were belonged to the nuclear family. Nearly 23.2% and 14.7% of students ever smoked or consumed alcohol, respectively. Family history of mental illness was observed in 82 (15.5%) students.

Total 56 (10.5%), 178 (33.6%), and 203 (38.3%) students had symptoms suggestive of depression, anxiety, and stress, respectively. Out of 56 students with depression, only 5 students (8.9%) consulted psychiatrists. Factors affective mental statuses of students are described in Tables 1 and 2. The prevalence of emotional distress was highest in 1st year students (stress – 39.6%, anxiety – 35.3%, and depression – 16.5%) as compared to other students but statistically not significant ($P = 0.06$). Female (91.8%) and students residing at home (83.3%) were more commonly affected by the emotional state than male (48.1%) and hosteller (59.1%). It was observed that smoking and alcohol were a potential risk factor for altered emotional state. There was no significant association of personal choice to join MBBS and number of the supplementary exam with the emotional state of students. Similar prevalence of mental disturbance was observed in those students who joined MBBS course with parents' choice (83.3%) and who joined with personal choice (84.6%). We did not find any significant difference in the emotional state between who satisfied with MBBS as a professional carrier (81.8%) and those who not satisfied (88.5%). Those who could cope up with huge MBBS syllabus easily (78.5%) had a lower prevalence of altered emotional state as compared to those who could not cope up (90.0%) but statistically not significant ($P = 0.56$). Students with poor academic performance (91.9%) were frequently affected with stress, anxiety, and depression as compared to students with better academic performance (67.2%). Students without extracurricular activity (90.6%) had altered emotional state.

Mental disturbance was significantly more found in students from the nuclear family (86.5%) and those who had family history of mental illness (91.5%) as compared to students from joint family (57.4%) and who had not positive family history (80.8%) ($P < 0.05$ in both groups). Those parents had passed graduate (89.3%), had a higher prevalence of affected emotional state as compare to lower education (82.7%), and had a higher education than graduate (65.7%). Those students who had a strong relationship with friends (76.8%) had significantly less disturbed mental status as compared to those who had a fair relationship (87.2%). However, such a significant difference was not found between the relationship with family and mental disturbance. The prevalence of any emotional state was not affected by personal satisfaction with body image and life.

DISCUSSION

In the present study, the prevalence of depression, anxiety, and stress was 10.5%, 33.6%, and 38.3%, respectively,

Table 1: Association of academic variables of medical students with emotional state (depression, anxiety, and stress)

Variable	Depression (*n*=56)	Anxiety (*n*=178)	Stress (*n*=203)	No stressed (*n*=93)	Total (*n*=530)	χ^2 value and *P*-value
Year						
1st	23 (16.5)	49 (35.3)	55 (39.6)	12 (8.6)	139 (26.2)	χ^2=22.8 *P*=0.06
2nd	15 (11.1)	45 (33.3)	56 (41.5)	19 (14.1)	135 (25.4)	
3rd first	10 (7.6)	44 (33.3)	45 (34.3)	33 (25.0)	132 (24.9)	
3rd second	8 (6.5)	40 (32.3)	47 (37.9)	29 (23.4)	124 (23.4)	
Gender						
Male	26 (9.5)	79 (28.7)	98 (35.6)	7 (26.2)	275 (51.9)	χ^2=30.3 *P*=0.001
Female	30 (11.8)	99 (38.8)	105 (41.2)	21 (8.2)	255 (48.1)	
Residence						
Hostel	40 (13.9)	155 (20.0)	174 (25.2)	46 (40.9)	415 (78.3)	χ^2=61.7 *P*=0.001
At home	16 (11.9)	23 (32.7)	29 (28.7)	47 (26.7)	115 (12.7)	
Ever smoked						
Yes	13 (10.6)	39 (31.7)	59 (48.0)	12 (9.8)	123 (23.2)	χ^2=9.62 *P*=0.02
No	43 (10.6)	139 (34.2)	144 (35.4)	81 (19.9)	407 (76.8)	
Ever consumed alcohol						
Yes	12 (15.4)	19 (24.4)	28 (35.9)	19 (24.4)	78 (14.7)	χ^2=6.8 *P*=0.07
No	44 (9.7)	159 (35.2)	175 (38.7)	74 (16.4)	452 (85.3)	
Choice to join MBBS						
Personal	44 (10.3)	145 (33.8)	164 (38.2)	76 (17.7)	429 (80.9)	χ^2=0.57 *P*=0.90
Parent	12 (11.9)	33 (32.7)	39 (38.6)	17 (16.8)	101 (19.1)	
Number of supplementary examinations						
None	44 (10.4)	140 (33.0)	158 (37.3)	82 (19.3)	424 (80.0)	χ^2=4.72 *P*=0.19
At least one	12 (11.3)	38 (35.8)	45 (42.5)	11 (10.4)	106 (20.0)	
Satisfaction with regard to MBBS as a professional carrier						
Satisfied	49 (10.3)	158 (33.1)	184 (38.5)	87 (18.2)	478 (90.2)	χ^2=2.01 *P*=0.55
Unsatisfied	7 (13.5)	20 (38.5)	19 (36.5)	6 (11.5)	52 (9.8)	
Self-assessment of ability to cope with the medical syllabus						
Low (1–4)	4 (8.0)	17 (34.0)	24 (48.0)	5 (10.0)	50 (9.4)	χ^2=4.84 *P*=0.56
Medium (5–7)	38 (10.6)	123 (34.3)	136 (37.9)	62 (17.3)	359 (67.7)	
High (8–10)	14 (11.6)	38 (31.4)	43 (35.5)	26 (21.5)	121 (22.8)	
Self-assessment of academic performance						
Low (1–4)	15 (12.2)	47 (38.2)	51 (41.5)	10 (8.1)	123 (23.2)	χ^2=18.9 *P*=0.004
Medium (5–7)	35 (10.3)	115 (33.8)	129 (37.9)	61 (17.9)	340 (64.2)	
High (8–10)	6 (9.0)	16 (23.9)	23 (34.3)	22 (32.8)	67 (12.6)	
Extracurricular activities						
Yes	19 (9.0)	62 (29.5)	66 (31.4)	63 (30.0)	210 (39.6)	χ^2=37.5 *P*=0.001
No	37 (11.6)	116 (36.3)	137 (42.8)	30 (9.4)	320 (60.4)	
Total	56 (10.5)	178 (33.6)	203 (38.3)	93 (17.5)	530 (100.0)	NA

in medical students of GMERS Medical College, Patan. Only 8.9% of students suffering from depression consulted psychiatrists. The risk factors for emotional distress were female gender, residing at home, nuclear family, addiction (smoking and alcohol), poor academic performance, less extracurricular activities, and positive family history. Other risk factors were observed in students with emotional distress but statistically not significant such as 1st year student, dissatisfaction with MBBS as a professional carrier, inability to cope up the syllabus. Joint family and strong relationship with friends were found protective against emotional distress. The prevalence of any emotional state was not affected by the number of supplementary exam, personal choice to join MBBS, personal satisfaction with body image and life.

The various study reported a higher prevalence of emotional distress among medical students. The study from Bhubaneswar reported that the prevalence of depression, anxiety, and stress

Table 2: Association of student's personal profile with emotional state (depression, anxiety, and stress)

Variable	Depression (n=56)	Anxiety (n=178)	Stress (n=203)	Nostressed (n=93)	Total (n=530)	χ^2 value and *P*-value
Family type						
Joint	25 (11.1)	72 (31.9)	77 (34.1)	52 (23.0)	226 (42.6)	χ^2=8.91 *P*=0.02
Nuclear	31 (10.2)	106 (34.9)	126 (41.4)	41 (13.5)	304 (57.4)	
Sibling						
No	29 (10.6)	96 (35.2)	107 (39.2)	41 (15.0)	273 (51.5)	χ^2=2.58 *P*=0.45
At least one	27 (10.5)	82 (31.9)	96 (37.4)	52 (20.2)	257 (48.5)	
Parents education						
High school and below	16 (8.6)	62 (33.5)	75 (40.5)	32 (17.3)	185 (34.9)	χ^2=31.4 *P*=0.001
Graduate	29 (11.9)	84 (34.6)	104 (42.8)	26 (10.7)	243 (45.8)	
Postgraduate	11 (10.8)	32 (31.4)	24 (23.5)	35 (34.3)	102 (19.2)	
Parental conflict						
Yes	3 (9.4)	10 (31.3)	14 (43.8)	5 (15.6)	32 (6.0)	χ^2=0.43 *P*=0.93
No	53 (10.6)	168 (33.7)	189 (38.0)	88 (17.7)	498 (94.0)	
Family H/O depression						
Yes	13 (15.9)	25 (30.5)	37 (45.1)	7 (8.5)	82 (15.5)	χ^2=8.51 *P*=0.03
No	43 (9.6)	153 (34.2)	166 (37.1)	86 (19.2)	448 (84.5)	
Relationship with friends						
Strong	24 (10.0)	76 (31.5)	85 (35.3)	56 (23.2)	241 (45.5)	χ^2=9.91 *P*=0.01
Fair	32 (11.1)	102 (35.3)	118 (40.8)	37 (12.8)	289 (54.5)	
Relationship with family						
Strong	38 (10.3)	119 (32.2)	138 (37.4)	74 (20.1)	369 (69.6)	χ^2=5.31 *P*=0.14
Fair	18 (11.2)	59 (36.6)	65 (40.4)	19 (11.8)	161 (30.4)	
Satisfaction with body image						
Satisfied	39 (10.1)	128 (33.1)	144 (37.2)	76 (19.6)	387 (73.0)	χ^2=4.42 *P*=0.21
Not satisfied	17 (11.9)	50 (35.0)	59 (41.3)	17 (11.9)	143 (27.0)	
Global satisfaction with life						
Satisfied	45 (10.6)	142 (33.4)	158 (37.2)	80 (18.8)	425 (80.2)	χ^2=2.72 *P*=0.43
Not satisfied	11 (10.5)	36 (34.3)	45 (42.9)	13 (12.4)	105 (29.8)	
Total	56 (10.5)	178 (33.6)	203 (38.3)	93 (17.5)	530 (100.0)	NA

was 51.3%, 66.9%, and 53%, respectively.[8] A Jodhpur based study also found that 57.9% and 47.4% of students had depression and anxiety, respectively.[9] This difference might be due to the difference of instrument used to assess emotional distress. On joining MBBS, students have to face certain challenges such as new environment, huge syllabus, greater workload, and change in eating, sleeping habits. Therefore, 1st- and 2nd-year students were suffering from more emotional distress. They were gradually adapted with the new environment. Khan *et al*.[7] supported this finding. It was documented that female had a 2.07 times higher risk of depression as compared to male students.[16] Rawat *et al*. reported that actively participating in extracurricular activities played protective role against depression in MBBS students (odd ratio = 0.224; confidence interval = 0.135−0.370).[17] Shaikh *et al*. reported that physical exercise reduced stress in students.[18] Sidana *et al*.[19] and Supe[14] documented that poor academic performance was significantly associated with depression in medical students. The study of Yousafzai *et al*. revealed that students believed that addiction to any substance worked as a coping mechanism for reducing stress. Therefore, the proportion of substance abuse was more observed in students suffering from anxiety and depression.[20] Rawat *et al*.[17] also found a significant association between parents conflict and depression among MBBS students. Givens and Tjia[21] observed that 22% of depressed students were using mental health counseling services which were higher than the study of Sidana *et al*. (4.7%)[19] and our study (8.9%). Avoidance of psychiatric consultation might be due to lack of confidentiality, stigma associated with mental disease, and fear of unwanted intervention.

Limitation

Information provided by students is based on the self-reported answer so it may be inaccurate. This is a cross-sectional study, so cause-effect relationship between variable and emotional distress could not be concluded.

CONCLUSION

Medical education is quite stressful. Anxiety and depression are significant hidden problems in medical students. The emotional distress was commonly observed in female who residing at home, belonged to nuclear family, and students with poor academic performance. Substance abuse, less extracurricular activities, poor relationship with friends, and positive family history are risk factors for depression. Therefore, these risk factors should be identified and interventions to reduce stress should be carried out.

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