



DEPRESSION AND ASSOCIATED FACTORS AMONG MEDICAL STUDENTS IN JAMNAGAR, GUJARAT.

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ABSTRACT **Background:** Depression among medical students is often a neglected public health problem having negative consequences like poor scholastic performance, suicidal tendencies etc. Appropriate strategies should be developed to identify such cases and referred to concerned speciality to avoid possible consequences.

Objective: This study aims to find out prevalence of depression among medical students and identifying its association with various socio-demographic and other factors attributed to it.

Methods: A cross-sectional study conducted at M P Shah Government Medical College, Jamnagar involving medical students of all three academic years with self-administered questionnaires based on the centre for epidemiological studies Depression Scale- Revised (CESD-R) to screen for depression. Total sample size was 281.

Results: The prevalence of depression was 16% among medical students. We couldn't find any association between prevalence of depression and attributable factors like poor family relation, not selecting medical career by choice, presence of debt for educational purpose etc. except a history of experience of a stressful event in family or college life.

Conclusion: 16% Medical students were suffering from depression and there was a positive association between depression and stressful event of medical students in college/family life.

KEYWORDS : Depression, Medical Students, Prevalence

INTRODUCTION

Depression is a serious public health problem, particularly among younger populations.[1-3] Several studies have reported high prevalence of depression among university students[2, 4, 5], mainly among medical students[5-8] than the general population.[1, 3, 9, 10] Medical education is one of the most stressful and challenging field, not only because it requires high academic rankings and professionalism[11], but also because of other reasons such as living away from families, financial constraints, high expectations, heavy work load, long study hours and lack of adequate sleep. [5, 6, 12, 13] Exposure to multiple risk factors will increase the risk of stress, anxiety and depression, which may lead to serious mental health problems and attempt to suicide [3, 6, 9] A meta-analysis of 77 studies found 28% prevalence of depression among medical students, globally.[8, 14]

Depression, once considered, a public health menace of developed countries, now pose a threat to people of developing countries. Many studies across the world have reported high prevalence of stress, anxiety and depression among medical students studying extensive curricula, frequent examinations and competitiveness. These ultimately lead to psychological distress, mental and emotional health problems in comparison to their non-medical age-matched peers.[1, 11, 15]

AIMS AND OBJECTIVES:

The present study was conducted to detect prevalence of depression among medical students and various factors attributed to it. This will help us to quantify the problem and implement strategies to promote their physical, mental and emotional well-being of young medical students.

MATERIAL AND METHODS

Setting

Present study was conducted at the M P Shah Government Medical College, Jamnagar, Gujarat. Study was cross-sectional in nature and conducted in April 2017.

Participants

The present medical education system in India is different from many other countries worldwide. First year of MBBS [Bachelor of Medicine and Bachelor of Surgery] comprises one year, Second year is of one and half year and Final year is divided into two parts of one year each in India. So, total duration of under graduation is four and half year with additional one year of internship. We attempted to include equal number of participants from each of first, second and final year of MBBS students through purposive sampling technique. Total number of participants expected was 300 considering 100 students selected randomly from each year. Those who do not wish to participate in the study and incompletely filled questionnaire were excluded. So, we remained with total sample size of 281 students. Self-administered questionnaires were distributed to the potential respondents. Information was collected on socio-demographic characteristics [including age, gender, place of residence, academic year, educational level, etc.], in addition to various factors [family, personal characteristics] considered responsible for depression.

Instrument

For the screening of risk of depression, we used The Centre for Epidemiologic Studies Depression Scale-Revised [CESD-R][16]. This self-report measure of depression scale includes 20 items in different groups defined by American Psychiatric Association Diagnostic and Statistical Manual, fifth edition. Response value for each item is scored on 4 point Likert scale, ranging from 0 [not at all or less than one day] to 3 [5-7 days or nearly every day for 2 weeks]. The Total CESD-R Score is calculated as a sum of responses to all 20 questions, with higher score indicating higher level of depressive episode. Score ranges from 0 to 60. A score equal to or above 16 indicates a person at risk for clinical depression.

Ethics Approval

The present study was approved by Institutional Ethical Committee of M P Shah Government Medical College, Jamnagar, Gujarat. Participation in the study was voluntary and informed consent was

obtained prior to participation in the study from medical students of the Institute.

Data Analysis:

Data were entered and analysed using Microsoft Excel sheet for Windows 7. Appropriate statistical tests were applied. Cross-tabulations were presented with Odds Ratio and p values.

RESULTS

Table No. 1. Demographic characteristics of medical students [n=281]

Variable	N	%
Sex		
Male	163	58.00
Female	118	42.00
Year of Study		
First year	91	32.38
Second year	93	33.10
Third year	97	34.52
Socio-economic status		
Upper	68	24.20
Upper Middle	63	22.42
Lower Middle	90	32.03
Upper Lower & Lower	60	21.36
Family Relations		
Good	269	95.73
Bad	12	4.27
Selected MBBS by choice		
Yes	270	96.10
No	11	3.90
Native State		
Gujarat	257	91.46
Out of Gujarat	24	8.54

The prevalence of depression in our study was 16% [45 out of 281 students] among medical students of M P Shah Govt. Medical College, Jamnagar. Mean age of students was 19.64 years [SD 1.36 years].

Usually, the prevalence of stress and depression is thought to be higher among third and final year students. But we didn't find any difference in prevalence of depression among first, second and third year of medical students.

Table No.2. Other characteristics of medical students [n=281]

Variable	N	%
Education debt		
Yes	15	5.34
No	266	94.66
Addiction		
Yes	5	1.80
No	276	98.20
Any major illness		
Yes	271	96.40
No	10	3.60
Chronic Medications		
Yes	11	3.90
No	268	96.10
History of depression in Family		
Yes	5	1.80
No	276	98.20
Any recent stressful event in college/family		
Yes	27	9.60
No	254	90.4
Extra-curricular activity		
Yes	121	43.1
No	160	56.9
Exercise		
Yes	173	61.6
No	108	38.4
Yoga/Meditation		
Yes	79	28.11
No	202	71.89

As per our study, about one third of medical students belonged to lower middle class, and one fourth each were in upper, upper middle and upper lower social class. Our study could not find out any significant

association between socio-demographic factors and the risk of depression. We could not find any gender difference in prevalence of depression among medical students.

Table No. 3. Crude OR and 95% C.I. for factors associated with depression among medical students, Jamnagar [n=281]

Variable	OR	95% C.I.	p-value	Chi-square/F-value
Sex	0.64	0.32-1.28	0.18	1.83
Year of study			0.68	0.78
Family Relations	1.8	0.37-7.69	0.41	0.22
Selected MBBS by choice	3.19	0.75-12.9	0.15	2.13
Native state	0.70	0.23-2.28	0.33	0.45
Education debt	1.33	0.29-5.39	0.90	0.72
Addiction	0.28	0.04-2.45	0.39	0.18
Any major illness	2.34	0.46-10.6	0.43	0.20
Chronic medications	1.17	0.01-6.13	0.83	0.69
History of depression in family	0.97	0.11-22.56	0.59	1.00
Any stressful event in college/family	0.33	0.13-0.87	0.01	6.66
Extra-curricular activity	1.3	0.64-2.63	0.54	0.61
Exercise	0.86	0.42-1.76	0.66	0.19
Yoga/Meditation	0.96	0.45-2.06	0.89	0.02

p<0.05, statistically significant

We could not find any association between prevalence of depression and possible attributable factors like poor family relation, not selecting medical career by choice, native place outside Gujarat, and presence of some sort of debt for educational purpose etc.

About 3.6% students were suffering from some sort of major medical illness, and same proportion of students were taking medications for a long time. We inquired weather family members of medical students had depressive symptoms or not. About 1.8% students agreed that their family members also had depressive episodes currently or in the past.

Around 10% students replied that they had experienced a stressful event in either college life or in their family and there was a statistically significant association between depression and history of a stressful incidence in family or college period

DISCUSSION

Through this study, we attempted to measure burden of depression among medical students and socio-demographic and other factors associated with it. A total of 281 medical students returned the fully answered questionnaires proforma, thus representing an overall response rate of 93.67% after discarding incompletely filled questionnaires proforma with 91%, 93% and 97% students from first, second and third year of graduation respectively. Mean age of students was 19.64 years [SD 1.36 years].

The prevalence of depression in our study was 16% [45 out of 281 students] among medical students of M P Shah Govt. Medical College, Jamnagar. As per a study of depression among medical students of a medical college in Mumbai, 39.9% students were found to have depression [17]. Another study from Noida Uttar Pradesh showed that 38% of adolescents had depression [18]. In our study, we found lower prevalence of depression among young medical students compared to other studies.

As the class of study increases, the prevalence of stress and depression also increases significantly [19]. According to a study of medical students of a private medical college of India, the prevalence of depressive symptoms was high among newly entered students [first and second year] as compared to the senior students, probably because of stress of new study environment and greater work load[20]. On the contrary, another study found greater prevalence of depression, anxiety and stress scores among fifth semester medical students compared to students of other semesters [21]. Kumar et al in Mysore Karnataka in his study observed high prevalence among second term medical students compared to eighth term students. [22] We didn't find

any difference in prevalence of depression among first, second and third year of medical students.

As per our study, about one third of medical students belonged to lower middle class, and one forth each were in upper, upper middle and upper lower social class. Our study could not find out any significant association between socio-demographic factors and the risk of depression. We could not find any gender difference in prevalence of depression among medical students. A study in a medical school of New Delhi also didn't find any gender difference among medical undergraduates. [23] Other studies showed that female medical students were more depressed than male students. [19, 24]

Majority of students [95.73%] had good relations with their family. About 5% replied that their relation with their family members was not good. About 96.1% students replied that they have chosen medical career by choice. Among student who participated in the study, about 8.54% belonged to states other than Gujarat. About 5% medical students said that they had some sort of debt for the medical study. e.g., educational loan or borrowing from someone etc

Around 10% students replied that they had experienced a stressful event in either college life or in their family and there was a statistically significant association between depression and history of a stressful incidence in family or college period. The study conducted in Karnataka, India found that family problems and family history of depression was significantly associated with depression among medical students [19].

Overall, the evidence suggests that exercise can improve depressive symptoms and this is observed even in those suffering from major depressive disorder who have been shown to benefit more from physical exercise than other psychiatric groups. [25,26]. Several studies including one meta-analysis and systemic review has shown association of mindfulness, meditation and yoga with mental wellbeing. [27,28]. Our study could not find significant association between yoga/meditation and exercise with depression among medical students.

CONCLUSION

The prevalence of depression among young medical undergraduate students was 16% and there was a positive association between depression and stressful event of medical students in college/family life.

RECOMMENDATIONS:

There should be supportive atmosphere both at home and at institution level, with appropriate and easily accessible crisis support committee headed by dean/principal of the institute. Periodic screening of students especially those with past history of stress and depressive episodes will help prevent its consequences and save valuable lives.

Further research is required to formulate strategies for early identification, prevention and treatment of depression in medical students since development of depression has been linked to a higher risk of future depressive episodes and greater long term morbidity that can affect health of medical professionals, which can also indirectly affect their patient managing skills.

LIMITATIONS OF THE STUDY:

We could not completely eliminate information bias, as the data are collected using self-administered questionnaires proforma.

1. Since it was a cross-sectional study, we could not establish cause-effect relationship between depression and various attributable factors. Cross-sectional design of our study is yet another limitation since associations presented lack temporality. There is a need of longitudinal studies to find out the same among medical students.
2. There was possibility of selection bias, though response rate was fairly high.
3. Sample size in our study was less, and so the power of statistical tests applied in it. Further studies with large sample size could generate more appropriate and useful findings.

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