Section: Forensic Medicine

Original Research Article

PREVALENCE OF DEPRESSION AMONG MEDICAL GRADUATES- AN ISSUE OF CONCERN

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Abstract

Background: The prevalence of mental health problems in medical students has continuously increased and is higher than the mental health problems in students with other subjects. In India current state of medical education and healthcare work places differ in certain areas from those in western or other Asian countries. At the start of medical school, medical students have mental health similar to non-medical counterparts but frequently studies suggest that students' mental health worsens during the medical training. **Objectives:** 1. To estimate the prevalence of depression among Medical Students at different levels of training. 2. To explore some key issues that have been shown to contribute to high level of depression.(Identify the associated stress factors). 3. To study any association between depression and the studied stress factors. 4. Recommendations for early identification and support. **Materials and Methods:** This cross-sectional study was conducted in the Department of Forensic Medicine in collaboration with Department of Psychiatry at Government Medical College, Azamgarh in the month of February 2021. The First Professional, Second Professional and Final Professional MBBS students, who gave consent were included in the study. Total 265 students were included in the study. Zung Self-Rating Depression Scale to assess the level of depression symptoms was used. **Results:** Overall prevalence of depression in the studied population is 38.9%. Out of 265 students 162(61.1%) students do not have depression while 65(24.5%), 30(11.3%) and 8(3%) suffered mild, moderate and severe depression respectively. Prevalence of depression is highest 48(49%) in 2nd Professional that is statically significant (p-value= 0.017). Females (49.4%) are significantly more affected than males (34.1%) with p-value=0.025.**Conclusion:** There is a need for awareness among medical students and other stakeholder, such as parents and faculty member regarding earliest symptoms and signs of depression so that early interventions may be administered. There is a recommendation for the authorities to include psychiatric evaluation and counselling and other needed interventions by the medical board for all the students at the time of admission to the course. A multicentre longitudinal study to estimate prevalence and persistence of depression among medical students in India is a need of the time.

INTRODUCTION

The prevalence of mental health problems in medical students has continuously increased and is higher than the mental health problems in students with other subjects.[1] In India current state of medical education and healthcare work places differ in certain areas from those in western or other Asian countries. At the start of medical school, medical students have mental health similar to non-medical counterparts.[2] but frequently studies suggest that students' mental health worsens during the medical training.[3]

Several stressors threaten medical students' mental health. Common stressors include adjustment to medical school environment, educational debt, heavy workload, sleep deprivation, difficult patients, poor learning environments, financial concerns and information overload.[4,5] A large patient population with a relatively small number of doctors and unstable relationship between patients and doctors often lead to violence, with patients as the perpetrators. Theses stressors can lead to

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catastrophic consequences such as anxiety, depression, impaired academic performance, impaired competency, medical errors and attrition from medical colleges. It will also lead to lack of professionalism and empathy towards their patients. In a large study in UK using 12-item General Health Questionnaire (GHQ-12) 30% of first year medical students, 30.6% of 4th year and 21.9% of 5th year medical students were suffering from some sorts of psychological distress.[6] Using the same questionnaire, a study in Turkey indicated that 47.9% of 2nd year students experienced emotional disorders.[7] A study from Malaysia also reported that 41.9% of Medical students experienced emotional disturbances.[8] However, there is very less information in the literature about the prevalence of depression among Indian medical students. Therefore, this study was planned to estimate the prevalence of depression among them.

Aims and Objectives

- To estimate the prevalence of depression among Medical Students at different levels of training.
- To explore some key issues that have been shown to contribute to high level of depression. (Identify the associated stress factors)
- To study any association between depression and the studied stress factors.
- Recommendations for early identification and support.

MATERIALS AND METHODS

This cross-sectional study was conducted in the Department of Forensic Medicine at Government Medical College Azamgarh in the month of February 2021. The First Professional, Second Professional and Final Professional MBBS students, who gave consent were included in the study. Total 265 students were included in the study.

Data were collected in 2 questionnaires. Questionnaire 1 included personal data such as age, sex, professional, religion and native place and stress inducing factors such as time spent in hobby or not, academic stress, home sickness, relationship problems, hectic lifestyle and future concerns. Questionnaire 2 included Zung Self-Rating Depression Scale to assess the level of depression symptoms.

Zung Self-Rating Depression Scale: It is a 20 item self report questionnaire that is widely used as a screening tool covering affective, psychological and somatic symptoms associated with depression. Items are framed in terms of 10 positive and 10 negative statements. Each item is scored on a scale of 1-4. The Raw Score ranges from 20-80:

- 20- 39: Normal range
- 40- 47: Mild Depression
- 48- 55: Moderate Depression
- 56- 80: Severe Depression

Statistical Methods: Descriptive and inferential statistical analysis has been carried out in the present study. Results on continuous measurements are presented on Mean ± SD (Min-Max) and results on categorical measurements are presented in Number (%). Significance is assessed at 5 % level of significance. The following assumptions on data is made, Assumptions: 1.Dependent variables should be normally distributed, 2.Samples drawn from the population should be random, Cases of the samples should be independent

The one-way analysis of variance (ANOVA) is employed to determine whether there are any statistically significant differences between the means of three or more independent (unrelated) groups. The one-way ANOVA compares the means between the groups you are interested in and determines whether any of those means are statistically significantly different from each other.

Assumptions for ANOVA test:

1. The dependent variable is normally distributed in each group that is being compared in the one-way ANOVA
2. There is homogeneity of variances. This means that the population variances in each group are equal.
3. Independence of observations.

Chi-square/ Fisher Exact test has been used to find the significance of study parameters on categorical scale between two or more groups, Non-parametric setting for Qualitative data analysis. Fisher Exact test used when cell samples are very small.

Significant figures

+ Suggestive significance (P value: 0.05<P<0.10)

* Moderately significant (P value:0.01<P □ 0.05)

** Strongly significant (P value : P□0.01)

Statistical software: The Statistical software namely SPSS 22.0, and R environment ver.3.2.2 were used for the analysis of the data and Microsoft word and Excel have been used to generate graphs, tables etc.

RESULTS

A total 265 students with mean age of 22.52±1.95 years participated in the study. Majority, 239(90.2%) of them were 20-25 years old. Out of 265 students 68 (25.7%) were in 1st Professional, 98 (37%) were in 2nd Professional and 99 (37.4%) were in Final Professional. Mean age in 1st Professional was 21.07±1.8 years, in 2nd Professional 22.19±1.44 years and in 3rd Professional 23.83±1.65 years (p-value≤0.001). Female students were 83(31.3%) and males were 182(68.7%).

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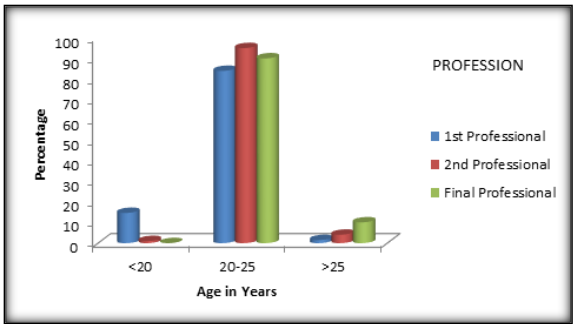

While studying prevalence of stress inducing factors it was found that 61(23%) students are not able to spend time in hobby. Academic stress, home sickness, relationship problems, hectic lifestyle and future concern were experienced by 192(72.5%), 124(46.8%), 30(11.3%), 149(56.2%) and 226(85.3%) respectively. All the stress factors are higher in second professional students of which hectic lifestyle (p-value 0.064) and future concern (p-value 0.011) are statically significant (Table 1).

Table 1: Stress Inducing Factors Vs Professional

Variables	PROFESSIONAL			Total	P Value
	1st Professional	2nd Professional	Final Professional		
Spends time in hobby					
• No	19(27.9%)	21(21.4%)	21(21.2%)	61(23%)	0.535
• Yes	49(72.1%)	77(78.6%)	78(78.8%)	204(77%)	
Academic stress					
• No	20(29.4%)	22(22.4%)	31(31.3%)	73(27.5%)	0.349
• Yes	48(70.6%)	76(77.6%)	68(68.7%)	192(72.5%)	
Home sickness					
• No	37(54.4%)	47(48%)	57(57.6%)	141(53.2%)	0.390
• Yes	31(45.6%)	51(52%)	42(42.4%)	124(46.8%)	
Relationship Problems					
• No	61(89.7%)	84(85.7%)	90(90.9%)	235(88.7%)	0.491
• Yes	7(10.3%)	14(14.3%)	9(9.1%)	30(11.3%)	
Hectic lifestyle					
• No	35(51.5%)	34(34.7%)	47(47.5%)	116(43.8%)	0.064+
• Yes	33(48.5%)	64(65.3%)	52(52.5%)	149(56.2%)	
Future concerns					
• No	10(14.7%)	7(7.1%)	22(22.2%)	39(14.7%)	0.011*
• Yes	58(85.3%)	91(92.9%)	77(77.8%)	226(85.3%)	
Total	68(100%)	98(100%)	99(100%)	265(100%)	

Chi-Square Test

Prevalence of Depression is summarized in Table 2. It summarizes Raw Score in three different Professionals. Mean Raw Score was highest 40.33±8.6 with 95% CI 38.61-42.05 in 2nd Professional that is statically significant p-value <0.001. Out of 265 students 162(61.1%) students do not have depression while 65(24.5%), 30(11.3%) and 8(3%) suffered mild, moderate and severe depression respectively (Table 2). Overall prevalence of depression in the studied population is 38.9%. Prevalence of depression is highest 48(49%) in 2nd Professional that is statically significant with p-value= 0.017 (Table 3). Females (49.4%) are significantly more affected than males (34.1%) with p-value=0.025 (Table 4). Severe depression was significantly higher in females (4.8%) than males (2.2%) with p-value= 0.063 (Table 5).

Table 2: Professional-Wise Raw Score of Zung Self-Rating Depression Scale

Raw Score	Depression Severity	PROFESSIONAL			Total
		1st Professional	2nd Professional	Final Professional	
20-39	Normal	42(61.8%)	50(51%)	70(70.7%)	162(61.1%)
40-47	Mild	12(17.6%)	30(30.6%)	23(23.2%)	65(24.5%)
48-55	Moderate	12(17.6%)	15(15.3%)	3(3%)	30(11.3%)
56-80	Severe	2(2.9%)	3(3.1%)	3(3%)	8(3%)
Total		68(100%)	98(100%)	99(100%)	265(100%)
Mean ± SD		38.76±8.34	40.33±8.6	35.4±8.96	38.09±8.91
95%CI		36.74-40.78	38.61-42.05	33.62-37.19	37.01-39.16

P=0.005**, Significant, Fisher Exact Test

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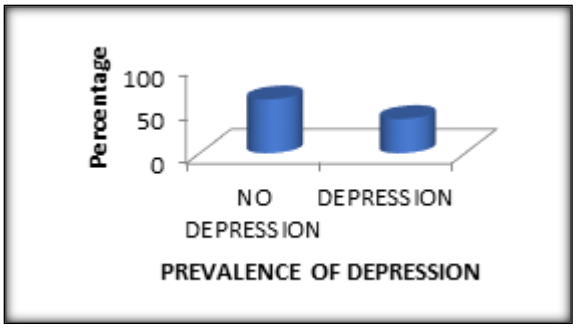

Table 4: Depression Status Vs Gender

DEPRESSION STATUS	Gender		Total
	Female	Male	
NO DEPRESSION	42(50.6%)	120(65.9%)	162(61.1%)
DEPRESSION	41(49.4%)	62(34.1%)	103(38.9%)
Total	83(100%)	182(100%)	265(100%)

P=0.025*, Significant, Chi-Square Test

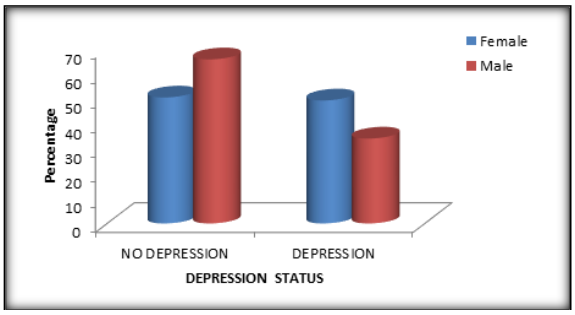

Table 5: Gender-Wise Depression Severity

DEPRESSION SEVERITY	Gender		Total
	Female	Male	
Normal	42(50.6%)	120(65.9%)	162(61.1%)
Mild	23(27.7%)	42(23.1%)	65(24.5%)
Moderate	14(16.9%)	16(8.8%)	30(11.3%)
Severe	4(4.8%)	4(2.2%)	8(3%)
Total	83(100%)	182(100%)	265(100%)

P=0.063+, Significant, Fisher Exact Test

All the stress factors are found to be more common in depressed students. However, home sickness and hectic lifestyle are significantly associated with depression with p-value= 0.18 and <0.001 respectively (Table 6).

Table 6: Stress Factors Vs Incidence of Depression

Variables	DEPRESSION		Total	P Value
	NO DEPRESSION	DEPRESSION		
Spends time in hobby				
• No	35(21.6%)	26(25.2%)	61(23%)	0.590
• Yes	127(78.4%)	77(74.8%)	204(77%)	
Academic stress				
• No	54(33.3%)	19(18.4%)	73(27.5%)	0.332
• Yes	108(66.7%)	84(81.6%)	192(72.5%)	
Home sickness				
• No	96(59.3%)	45(43.7%)	141(53.2%)	0.018*
• Yes	66(40.7%)	58(56.3%)	124(46.8%)	
Relationship Problems				
• No	148(91.4%)	87(84.5%)	235(88.7%)	0.126
• Yes	14(8.6%)	16(15.5%)	30(11.3%)	
Hectic lifestyle				
• No	86(53.1%)	30(29.1%)	116(43.8%)	<0.001**
• Yes	76(46.9%)	73(70.9%)	149(56.2%)	
Future concerns				
• No	28(17.3%)	11(10.7%)	39(14.7%)	0.193
• Yes	134(82.7%)	92(89.3%)	226(85.3%)	
Total	162(100%)	103(100%)	265(100%)	

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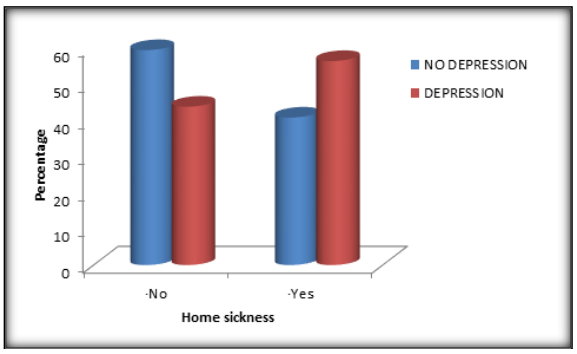
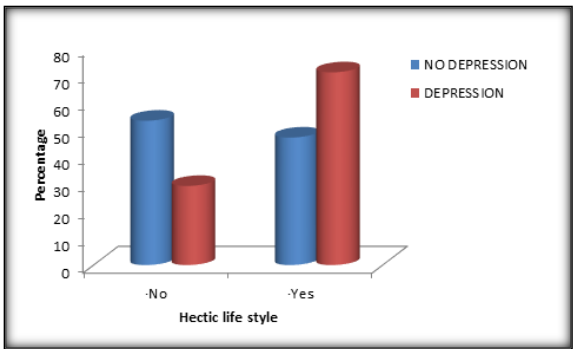
Chi-Square Test





DISCUSSION

In the present study, the prevalence of depression among medical students and association with important stress factors were studied. Prevalence of depression is 38.9% in this study that is slightly higher than two similar studies in Nepal.[9,10] Worldwide approximately one third medical students suffer from depression which is much higher than general population (approximately 3.9-6.6%).[10] Another study reported depression among 50% of medical students.[11] Another meta-analysis showed pooled prevalence of depression as 50% (95% CI: 31%-70%).[12] A study using self-reported Patient Health Questionnaire (PHQ-9) showed depression among 21.5% Medical Students.[13] The second professional students were significantly more affected by depression (49%).The higher incidence of depression among second professional medical students is attributed to vast academic syllabus in second professional as well as other stress inducing factors that every medical student faces. Not being able to spend time in hobby, academic stress, home sickness, relationship problems, hectic lifestyle and future concern are stress inducing factors studied in the study which were higher in second professional students. Out of all stress inducing factors hectic lifestyle (p value<0.001) and home sickness (p=0.018) were significantly associated with higher incidence of depression (Table 6).

Significantly (p-value=0.025) higher prevalence (49.4%) among females as compared to males (34.1%) is found. Various other studies on medical students also showed higher prevalence in females.[9,10,12,14,15] Though no significant association has been reported by few studies.[13,16] The higher prevalence among females might be due to higher incidence of depression in females in general population.[17] In a study, opinion that a mental health problem will be considered a weakness by teachers and peer groups, concerns that psychiatric consultation would hamper grades/ future career, and concerns about confidentiality and social ostracism were reported by students with depression and anxiety disorders.[18] These are the common reasons that prevent students from seeking psychiatric support leading to more aggravation of the problem.

CONCLUSION

Significant numbers of medical students are affected by depression. Female gender is more prone to depression as compared to male. Hectic lifestyle and home sickness were significantly associated with depression. Efforts should be aimed at early identification of students with depressive symptoms by regular screening of students at all levels of training along with counselling services. There is a need for awareness among medical students and other stakeholder, such as parents and faculty member regarding earliest symptoms and signs of depression so that early interventions may be administered. There is a recommendation for the authorities to include psychiatric evaluation and counselling and other needed interventions by the medical board for all the students at the time of admission to the course. A multicentre longitudinal study to estimate prevalence and persistence of depression among medical students in India is a need of the time.

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