ORIGINAL RESEARCH

Prevalence of Stress, Anxiety and Depression among Medical Students

[1]Dr. Gagneen Kaur Sandhu, [2]Dr. Preetinder Singh, [3]Dr. Manjinder Kaur

[1]Associate Professor, Department of Physiology, GMC Patiala, Punjab, India
[2]Assistant Professor, Department of Forensic Medicine, GMC Patiala, Punjab, India
[3]Associate Professor, Department of Medicine, GMC Patiala, Punjab, India

Corresponding author
Dr. Manjinder Kaur
Associate Professor, Department of Medicine, GMC Patiala, Punjab, India

ABSTRACT
Introduction: Anxiety, depression, and stress are common mental health issues that affect people in all walks of life. However, these issues can be particularly prevalent among students of medical college, who are often under immense pressure to excel academically and professionally. A number of studies have been conducted to assess the prevalence of anxiety, depression, and stress among medical college students, and the findings are cause for concern. There are fewer studies that assess the burden of depression, anxiety, and stress specifically targeting first-year medical students. Therefore it is important to have more studies concerning the mental health of medical students in their early years of medical school.**Material and Methods:** The present study is an Institutional based cross-sectional study conducted among students of medical college. The medical students from first year were recruited in this study. All the students available on the days of the data collection were included while the students who did not gave consent and the students who were absent during the day of data collection were excluded from this study. **Results:** The present study recruited a total of 186 medical students, comprising of more than 50% of male respondents followed by female respondents (48.9%). There was a significant different between variables like age, height and weight with reference to gender. However other variables like QIDS(quick inventory of depressive symptomatology), PHQ(patient health questionnaire), GAD(generalised anxiety disorder), PSS(perceived stress scale), k-scale (Kuppuswami socioeconomic scale) and BMI(body mass index) were statistically insignificant. Moreover, the PHQ, PSS and K - scale was higher among female respondents as compared to male respondents whereas the variables like GAD and QIDS were similar in both the groups. It was recorded that there was an insignificant association between levels of anxiety, depression, anxiety, and gender. However, socio-economic status was found to be statistically associated with stress, anxiety and depression. **Conclusion:** Mental health issues can lead to burnout, decreased empathy, and decreased job satisfaction, which can ultimately impact the quality of care that patients receive. Therefore, it is important that medical colleges take steps to address these issues, such as providing mental health resources and support, promoting work-life balance, and fostering a culture of openness and support.
Keywords: Stress, Anxiety, Depression

INTRODUCTION

The milieu of medical training is regarded as intense and demanding to students [1,2]. Medical education is vast and challenging. This puts heavy burden on the medical students. The long college hours, compulsion of attendance, heavy competition to secure good marks, and vast syllabus keep them busy and are thus demanding heavily. This stretches their psychological distress and thus they become vulnerable to depression, anxiety, and stress. Previous studies have shown that the prevalence of psychological distress [the psychological distress is broadly referred to anxiety, stress, depression and mental health related problems among medical students during medical training in different countries and institutions ranging from 21% to 56% [3]. Previous studies have found that sources of stress among medical students seem to be related to the medical training. This has been a cause of concerns to medical schools and in the past decades, calls for a remedy to improve this situation have been echoed by many researchers [4].

High rates of psychological morbidity among students, such as anxiety and depressive symptoms, have been reported in several studies from different western countries, as well as from other parts of the world.[5,6] A wide range of different measures has been used to address these phenomena. Depressive symptomatology in medical students has been assessed with, for example, Beck's Depression Inventory (BDI), [7] the 12-item General Health

Questionnaire (GHQ-12) [8], PH-Q- 9 and many others. In addition to endogenous factors which influence psychological stress in general population (e.g. sex, personality traits, believes, etc), previous studies have noted that the majority of medical students have the same unique exogenous factors amongst themselves, different from those that non-medical University students face. These factors are classified as academic and non-academic stressors [9]. More and more data are thus required to study the prevalence of depression, anxiety, and stress among the medical students and to find the associated risk factors to plan preventive and promotive health strategies, especially for the medical students. There are fewer studies that assess the burden of depression, anxiety, and stress specifically targeting first-year medical students and it is important to have more studies concerning the mental health of medical students in their early years of medical school.Hence the present study was carried out to study the prevalence of anxiety, depression, and stress among the first year medical students.

MATERIAL AND METHODS

The present study is an Institutional based descriptive cross-sectional study conducted among students of medical college. The medical students from first year were recruited in this study. All the students available on the days of the data collection were included while the students who did not give consent or were absent on the day of data collection were excluded from this study. QIDS and PHQ scales were used for determining the levels of depression among the medical students. As per the QIDS scale, the student who scored between 1-5 was considered with no migration. Moreover, the score between 6-10, 11-15 and 16-20 was classified as mild, moderate and severe level of depression respectively. According to PHQ scale, the scores of the students between 0-5 were considered with no depression. For assessing the levels of anxiety, GAD scale was used and the score between 0-4 was considered with minimal anxiety. However, the score ranging between 5-9, 10-15 and >15 was considered as mild, moderate and severe level of anxiety respectively. The stress among the medical students was assessed using PSS scale and the score between 0-13 was classified as low

perceived stress. The scores ranging between 14-26 and 27-40 was considered as moderate and severe perceived stress, respectively.

RESULTS

The present study recruited a total of 186 medical students (as shown in Figure 1), comprising of more than 50% of male respondents followed by female respondents(48.9%). The aim of this study was to assess the prevalence of stress, anxiety and depression among medical students in order to study the factors associated with anxiety, stress and depression which were scored according to QIDS, PHQ, GAD and PSS. The study also aimed at determining the correlation between different anthropometric parameters and levels of stress, anxiety and depression. As shown in figure 2, according to the age-wise distribution of the respondents, majority of the respondents belonged to the age of 18 years (49%) followed by other age groups. The comparison between different variables with respect to gender, as illustrated in Table 1, recorded that there was a significant different between variables like age, height and weight with reference to gender. However other variables like QIDS, PHQ, GAD, PSS, k-scale and BMI were statistically insignificant. Moreover, the PHQ, PSS and K - scale was higher among female respondents as compared to male respondents whereas the variables like GAD and QIDS were similar in both the groups.

As shown in Table 2, the levels of depression, anxiety and stress, scored according to QIDS, PHQ, GAD and PSS respectively were insignificantly associated with gender. Moreover, according to QIDS classification, more than 50% female respondents had moderate level of depression whereas as per PHQ classification, more than 50% of the male respondents had moderate level depression.

Table 3 shows the association of BMI, stress, depression and anxiety with reference to socio-economic status. It was observed that depression, anxiety and stress was significantly associated with the socio-economic status of the students. Majority of the students with the K-s scale ranging between 16-29 were observed with mild anxiety and depression. However, the present study reported that there was no significant association between QIDS scale for depression , BMI and socio-economic status.

Table 1: Comparison of different variables with reference to gender

Test Variable	Gender		P-Value
	Male	Female	
Age	18.8±0.8	18.5±0.7	0.027*
QIDS	8.2±5.2	8.3±5.4	0.891
PHQ	5.7±4	6.1±4.7	0.508
GAD	5.7±4.7	5.4±4	0.729
PSS	17.5±6.8	18.2±6.3	0.479
Height	175.8±6.8	161.9±7.1	0..001*
Weight	71.3±10.9	59.3±10.5	0..001*
K-Scale	22.8±3.6	23±2.8	0.664
BMI	23.1±3.2	22.6±3.9	0.362

Table 2: Association between different variables and gender

Variable	Category	Gender		Total	p-value
		Female	Male		
QIDS	No Depression (1-5)	36(52.2%)	33(47.8%)	69(100%)	0.33
	Mild Depression (6-10)	20(38.5%)	32(61.5%)	52(100%)	
	Moderate Depression (11-15)	24(55.8%)	19(44.2%)	43(100%)	
	Severe Depression (16-20)	11(50%)	11(50%)	22(100%)	
PHQ	Minimal Depression (0-5)	53(51%)	51(49%)	104(100%)	0.14
	Mild Depression (6-10)	20(40.8%)	29(59.2%)	49(100%)	
	Minimal Depression (11-15)	12(46.2%)	14(53.8%)	26(100%)	
	Moderate Depression (16-20)	6(85.7%)	1(14.3%)	7(100%)	
GAD	Minimal Anxiety (0-4)	47(49%)	49(51%)	96(100%)	0.71
	Mild Anxiety (5-9)	30(53.6%)	26(46.4%)	56(100%)	
	Moderate Anxiety (10-15)	9(42.9%)	12(57.1%)	21(100%)	
	Severe Anxiety (>15)	5(38.5%)	8(61.5%)	13(100%)	
PSS	Low perceived stress (0-13)	18(38.3%)	29(61.7%)	47(100%)	0.241
	Moderate perceived stress (14-26)	62(52.5%)	56(47.5%)	118(100%)	
	Severe perceived stress (27-40)	11(52.4%)	10(47.6%)	21(100%)	
K-Scale	5-10	0(0%)	1(100%)	1(100%)	0.57
	11-15	3(37.5%)	5(62.5%)	8(100%)	
	16-25	75(51%)	72(49%)	147(100%)	
	26-29	13(43.3%)	17(56.7%)	30(100%)	
BMI	Underweight	10(52.6%)	9(47.4%)	19(100%)	0.42
	Healthy Weight	57(49.6%)	58(50.4%)	115(100%)	
	Overweight	20(42.6%)	27(57.4%)	47(100%)	
	Obesity	4(80%)	1(20%)	5(100%)	

Table 3: Association between different variables with socio-economic status

Variables		K-Scale					P-Value
		1-4	5-10	11-15	16-25	26-29	
BMI	Underweight	0(0%)	0(0%)	1(12.5%)	17(11.6%)	1(3.3%)	0.721
	Healthy Weight	0(0%)	0(0%)	6(75%)	88(59.9%)	21(70%)	
	Overweight	0(0%)	1(100%)	1(12.5%)	38(25.9%)	7(23.3%)	
	Obesity	0(0%)	0(0%)	0(0%)	4(2.7%)	1(3.3%)	
PSS	Low perceived stress (0-13)	0(0%)	0(0%)	1(12.5%)	35(23.8%)	11(36.7%)	**0.042**
	Moderate perceived stress (14-26)	0(0%)	0(0%)	6(75%)	96(65.3%)	16(53.3%)	
	Severe perceived stress (27-40)	0(0%)	1(100%)	1(12.5%)	16(10.9%)	3(10%)	
QIDS	No Depression (1-5)	0(0%)	0(0%)	1(12.5%)	56(38.1%)	12(40%)	0.165
	Mild Depression (6-10)	0(0%)	0(0%)	2(25%)	44(29.9%)	6(20%)	
	Moderate Depression (11-15)	0(0%)	0(0%)	3(37.5%)	33(22.4%)	7(23.3%)	
	Severe Depression (16-20)	0(0%)	1(100%)	2(25%)	14(9.5%)	5(16.7%)	
PHQ	Minimal Depression (0-5)	0(0%)	0(0%)	1(12.5%)	82(55.8%)	21(70%)	**0.001**
	Mild Depression (6-10)	0(0%)	0(0%)	3(37.5%)	43(29.3%)	3(10%)	
	Minimal Depression (11-15)	0(0%)	0(0%)	4(50%)	19(12.9%)	3(10%)	
	Moderate Depression (16-20)	0(0%)	1(100%)	0(0%)	3(2%)	3(10%)	
GAD	Minimal Anxiety (0-4)	0(0%)	0(0%)	3(37.5%)	73(49.7%)	20(66.7%)	**0.001**
	Mild Anxiety (5-9)	0(0%)	0(0%)	3(37.5%)	50(34%)	3(10%)	
	Moderate Anxiety (10-15)	0(0%)	0(0%)	2(25%)	17(11.6%)	2(6.7%)	
	Severe Anxiety (>15)	0(0%)	1(100%)	0(0%)	7(4.8%)	5(16.7%)	

Figure 1: Gender-wise distribution of the respondents
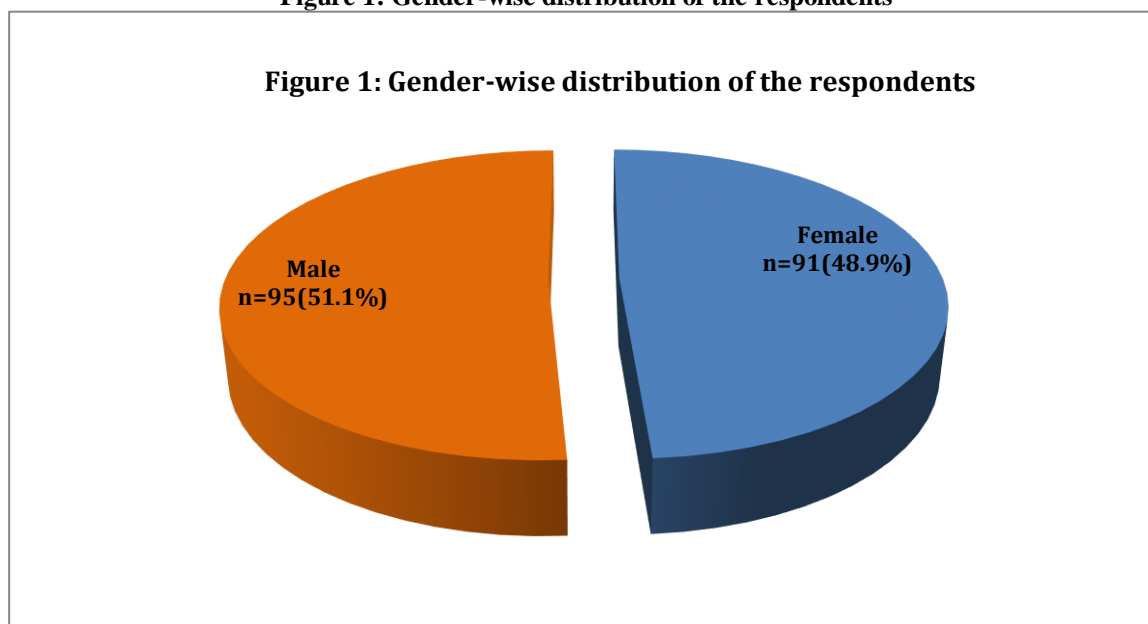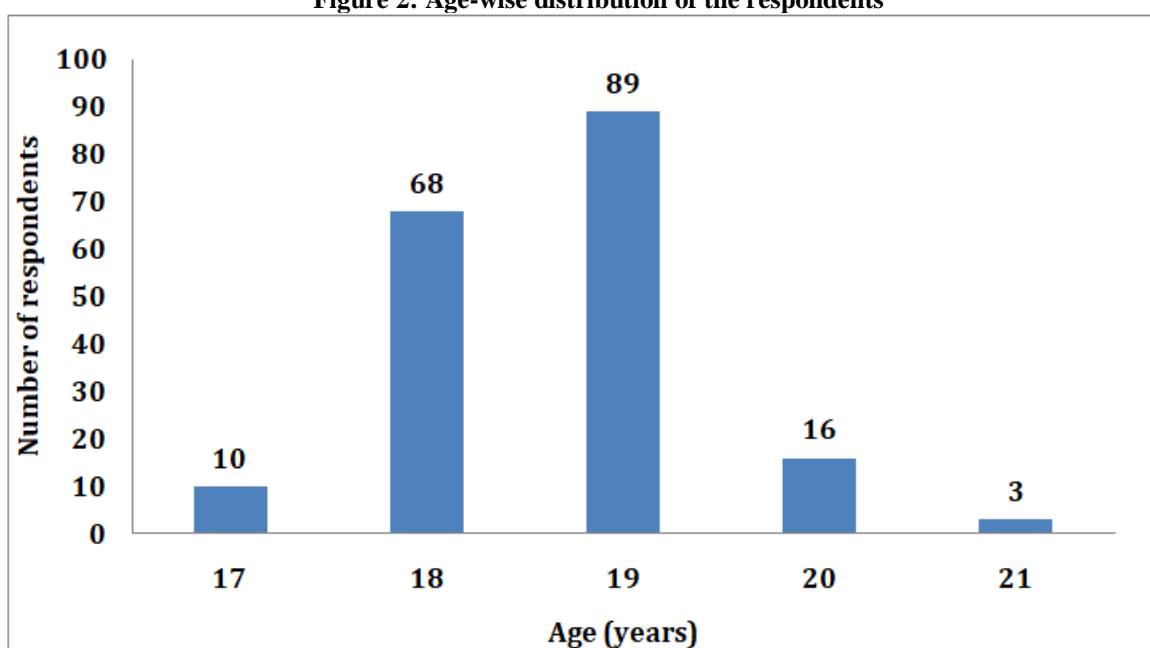
Male
n=95(51.1%)

Female
n=91(48.9%)

Figure 2: Age-wise distribution of the respondents

DISCUSSION & CONCLUSION

The present study was carried out to assess the prevalence of stress, anxiety and depression among medical students. To determine the level of depression, QIDS and PHQ scale was used whereas for assessing the level of anxiety and stress, GAD and PSS scales were used respectively. According to PHQ scale, out of the total study subjects, more than 55% students had mild level of depression. It was reported that majority of the female students had mild depression, as compared to male students. However, mild and minimal level of depression was recorded majorly among male students as compared to female students. As per the QIDS classification, the prevalence of stress was 62% and it was reported that

majority of the medical students had mild level of depression. On the other hand, the overall prevalence of depression, anxiety, and stress among first-year medical students were found to be 44%, 59.3%, and 45.1% respectively. [10] In relevance to our findings, the study carried out by Ameer et al. [11], reported that the Prevalence of depression, anxiety, and stress among medical students was 58.2%, 68.7%, and 35.3%, respectively. The most common was moderate grade of depression (30.7%); severe anxiety (39.6%), and moderate stress (15.8%).

Moreover, the systematic review done by Sarkar et al.[12], the prevalence of depression was 39.2% which was lower than our findings. Also, the prevalence of anxiety was reported as 34.5% which

was lower in the present study while the prevalence of stress was 51.3%, which was lower than the present study. Another study was conducted by Reang and Bhattacharjya.[13] which aimed at assessing the emotional disorders among medical students. Their study reported that the prevalence of stress (94.52%) was the highest as compared to depression and anxiety. The findings were contrary to the present findings.

Another study was conducted by Sidana et al.[14] used PHQ-9 tool. The objective of the study was to assess the depression among medical students. The study findings reported that the prevalence of depression was 21.5% which was very low as compared to the present findings. The difference might be due to the small sample size. A study conducted among first-year medical students in an Egyptian Public University reported the prevalence of depression, anxiety, and stress to be 63.6%, 78.4%, and 57.8% respectively which is higher compared to our study[15]. The present findings also reported that the socio-economic status was significantly associated with the stress, anxiety and depression. On contrary to our findings, the study conducted by Kasukurti et al. [16] showed that there was an insignificant association between stress, anxiety and depression with reference to socio-economic status.

Moreover, there was a very high prevalence of depression, anxiety, and stress among medical students as per our findings. However, it is clear from these results that the medical students feel agitated, apprehensive, and sad. These results cannot be generalised to other medical students at other medical colleges. Stress, anxiety, and depression were not shown to be significantly associated with gender. The consequences of anxiety, depression, and stress among medical college students can be serious, not only for the students themselves but also for the patients they will eventually treat. Mental health issues can lead to burnout, decreased empathy, and decreased job satisfaction, which can ultimately impact the quality of care that patients receive. Therefore, it is important that medical colleges take steps to address these issues, such as providing mental health resources and support, promoting work-life balance, and fostering a culture of openness and support.

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