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ORIGINAL ARTICLE

Comparison of prevalence of psychological morbidity between a public and a Private Medical College in Mirpur Azad Kashmir.

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ABSTRACT… Objective: To compare the prevalence of depression and anxiety between a public sector and a private medical college and assess the psychological health of medical students in general. **Study Design:** Cross-sectional Comparative study. **Setting:** Private and a Public Sector Medical College in Mirpur- Azad Kashmir. **Period:** January, 2020 - September 2020. **Material & Methods:** Total 434 students (217 from each college) of first year to final year MBBS were enrolled in the study after written informed consent. PHQ-9 questionnaire was used for screening depression and Hamilton Anxiety Rating Scale (HAM-A) for anxiety. Students were classified as having minimal, mild, moderate, moderately severe and severe depression and for Hamilton Anxiety Rating Scale, as having mild to moderate and moderate to severe anxiety. Data was analyzed using SPSS version 22. Frequency tables representing demographic profile of medical students were drawn. **Results:** Overall prevalence of depression was 62%. 29.4 % from public and 20.3% from private sector medical college's students suffered from moderate to severe depression while 26.7% students from private sector and 20.7 % from public sector suffered from moderate to severe form of anxiety. Cross-tabulation results indicated that indicators of depression and anxiety were more commonly reported by the students of public medical college in comparison to the private medical college students. **Conclusion:** Significant psychological morbidity is experienced by medical students and its prevalence is higher in private sector medical college.

Key words: Anxiety, Depression, Psychological Morbidity, Undergraduate Medical College.

INTRODUCTION

Psychological wellbeing matters at any stage of a person's life. Psychological morbidity is the term for depression, anxiety or any symptom without comorbidity. Depression is a common mental health condition which can impair mental as well as physical health.[1] Over 300 million people worldwide are estimated to suffer from depression, which is identified by the World Health Organization (WHO) as the single biggest element leading to global disability.[2] Anxiety is defined as a chronic condition characterized by an excessive and persistent sense of apprehension with physical manifestations.[3] Various studies have revealed that medical students record high levels of depression, anxiety and stress during their academic years which adversely affect their mental wellbeing, motivation, academic success, learning and comprehension and can even contribute to attempted suicides.[4-5]

Various factors contribute to depression and anxiety in medical students. High parental expectations, the vastness of the course, overcrowded lecture halls and frustration with classroom lectures have been highlighted as common mediators of depression.[6] Another Study reported that the related psychological distress factors among medical students correlated with academic, non-academic, parental and cultural backgrounds.[7] Furthermore, Students living in dormitories can also be vulnerable to external stressors, such as financial difficulties, Adaptation to new surroundings, first time away from home, changes in living provisions.[6-8]

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It is evident that chronic and continued exposure to stressful condition leads to emotional, physical and mental disturbance[8], therefore, it is necessary to recognize the prevalence and risk factors of stress among medical students, which have negative impact not only on their health but also their academic achievements not only during their study period but later in their professional life.[9,10]

Our study intended to investigate the prevalence of depression and anxiety symptoms in medical students of two medical colleges in Mirpur, Azad Kashmir and to compare this prevalence between the two, one being a public sector and other being a private sector medical college. As both the colleges in our study have students from different areas of Pakistan including the tribal areas, our study will give a better idea of the psychological health of medical students in general due to representation of students not only from different areas of Pakistan but also from different socioeconomic, family background and topographical distribution.

MATERIAL & METHODS

The study was carried out at Mohi-ud-Din Islamic Medical College (MIMC) which is a private medical college and Mohtarma Benazir Bhutto Shaheed Medical College (MBBS-MC) which is a public sector medical college located in Mirpur, Azad Kashmir. It was a cross-sectional comparative study which was started in January, 2020, interrupted temporarily due to Covid-19 pandemic and then resumed in September 2020 after obtaining ethical approval (Ref. No. 1-2/20-MIMC/ERB/0016). Total 434 students (217 from each college) participated in the study. The sample size of 434 was calculated using “Epi Version 3” with a confidence interval of 95%. Both the genders were included after written informed consent and a convenient random sampling technique was used for the selection of the students. Students who have a history of depression and are on any medications that can influence our study were not incorporated. Students from the first year MBBS to the final year MBBS were enrolled in the study, however, the participation was entirely voluntary.

The PHQ-9 questionnaire[11], which is 61 % sensitive and 94% specific in screening depression in the adults was used for screening depression and Hamilton Anxiety Rating Scale (HAM-A)[12], for evaluating anxiety symptoms. Along with these, a self-made socio-demographic Performa was used based on the questioning regarding their gender, age, academic year, boarder or non-boarder, family history of depression etc. Results of PHQ-9 questionnaire are interpreted as follows:

Minimal	0-4
Mild	5-9
Moderate	10-14
Moderately severe	15-19
Severe	20-27

Hamilton Anxiety Rating Scale has been a widely used scale to rate the severity of anxiety symptoms. It consists of 14 questions covering many features of the generalized anxiety disorder. Each item is scored from 0 (not present) to 4 (severe), yielding a total score range of 0 -56. However, it has been approved to interpret the results of evaluation as follows:

mild anxiety	0-17
mild to moderate anxiety	18-24
moderate to severe anxiety	25-30

All the data was collected by authorized personnel, entered into Microsoft Excel spreadsheet and final analysis was done using the SPSS version 22. Descriptive statistics, frequencies and percentages were calculated for all the variables used in the research. Frequency tables representing demographic profile of medical students were drawn. Cross tabulation between the two variables was done for comparison.

RESULTS

Total 434 students from both the colleges participated in the study, 217 students from each college (MIMC &MBBS, MC). More than half of the medical students were females and around eighty percent students had 17-22 years of age and no family history of depression. All the students were unmarried. Equal numbers of students were included in the research from both medical colleges. Four-fifth of the students

was residing in college hostel. In response to the question about physical activity, around sixty percent of the students reported moderate physical activity. Almost one-fifth of the medical students had severe home sickness and around 7% reported having addiction. (Table-I)

Variable	Frequency	Percentage
Gender		
Male	196	45.2
Female	238	54.8
Age		
17-22 years	350	80.6
23-27 years	84	19.4
Marital Status		
Single	434	100.0
College		
MIMC	217	50.0
MBBSMC	217	50.0
Academic Year		
1st year	64	14.7
2nd year	92	21.2
3rd year	92	21.2
4th year	92	21.2
5th year	94	21.7
Residential Status		
College Hostel	350	80.6
Private Hostel	16	3.7
Family/Home	62	14.3
Separate Residence	6	1.4
Physical Activity		
Low	118	27.2
Moderate	273	62.9
Vigorous	25	5.8
Don't Know	18	4.1
Family History of Depression		
No	341	78.6
Yes	75	17.3
Don't Know	18	4.1
Home Sickness		
Mild	131	30.2
Moderate	153	35.3
Severe	94	21.7
Don't Know	56	12.9
Addiction		
No	393	90.6
Yes	29	6.7
Don't Know	12	2.8

Table-I. Frequency table showing demographic characteristics of medical students
Note. n = 434 Medical Students

The results of the study revealed that overall prevalence of depression in undergraduate medical students was 62%. 49.7 % student from both colleges (29.4 % from public and 20.3% from private sector medical college) suffered from moderate to severe depression. Results of cross-tabulation showed that indicators of depression like lack of interest, feeling depressed and tired, sleep issues, lack of concentration, being slow or restless and suicidal ideations were more severely reported by the students of public medical college in comparison to the private medical college students. However, indicators like feeling bad about one and appetite issues were more prevalent in the students of private medical college. (Table-II) On average, 23.7% of students (26.7% from private sector and 20.7 % from public sector) suffered from moderate to severe form of anxiety in our study. The results of the cross-tabulation showed that anxiety indicators like somatic (both muscular and sensory), genitourinary and respiratory symptoms were more prevalent in the students of public medical college i.e. MBBSMC. However, indicators like anxious mood, tension, fear, insomnia, depressed mood, intellectual symptoms, cardiovascular symptoms; gastrointestinal symptoms and behavior at interview were more severely reported in the students of private medical college. Also, autonomic symptoms were more prevalent in private medical college students. (Table-III).

More than three-fifth of the medical students had minimal and mild depression. Private medical college had more number of students who were experiencing minimal, mild and moderately severe depression while public medical college had comparatively more cases of moderate and severe depression. Around three forth of the students of both private and public medical college had mild anxiety. Private medical college students have reported more severe anxiety when compared to public sector medical students. (Table-IV)

Questions	Responses	Frequency (Percentages) of Groups		
		MIMC (N=217)	MBBSMC (N=217)	Total (N=434)
1. Little interest or pleasure in doing things	Not at All Several Days More than Half the Days Nearly Everyday	71 (32.7) 82 (37.8) 40 (18.4) 24 (11.1)	55 (25.3) 86(39.6) 42 (19.4) 34 (15.7)	126 (29.0) 168 (38.7) 82 (18.9) 58 (13.4)
2. Feeling down, depressed or hopeless	Not at All Several Days More than Half the Days Nearly Everyday	95 (43.8) 94 (43.3) 21 (9.7) 7 (3.2)	104 (47.9) 72 (33.2) 31 (14.3) 10 (4.6)	199 (45.9) 166 (38.2) 52 (12.0) 17 (3.9)
3. Trouble falling or staying asleep, or sleeping too much	Not at All Several Days More than Half the Days Nearly Everyday	93 (42.9) 72 (33.2) 35 (16.1) 17 (7.8)	113 (52.1) 39 (18.0) 38 (17.5) 27 (12.4)	206 (47.5) 111 (25.6) 73 (16.8) 44 (10.1)
4. Feeling tired or having little energy	Not at All Several Days More than Half the Days Nearly Everyday	75 (34.6) 110 (50.7) 20 (9.2) 12 (5.5)	78 (35.9) 81 (37.3) 37 (17.1) 21 (9.7)	153 (35.3) 191 (44.0) 57 (13.1) 33 (7.6)
5. Poor appetite or overeating	Not at All Several Days More than Half the Days Nearly Everyday	92 (42.4) 80 (36.9) 29 (13.4) 16 (7.4)	108 (49.8) 63 (29.0) 29 (13.4) 17 (7.8)	200 (46.1) 143 (32.9) 58 (13.4) 33 (7.6)
6. Feeling bad about yourself	Not at All Several Days More than Half the Days Nearly Everyday	137 (63.1) 43 (19.8) 19 (8.8) 18 (8.3)	171 (78.8) 22 (10.1) 17 (7.8) 7 (3.2)	308 (71.0) 65 (15.0) 36 (8.3) 25 (5.8)
7. Trouble concentrating on things like reading a newspaper or watching TV	Not at All Several Days More than Half the Days Nearly Everyday	110 (50.7) 81 (37.3) 17 (7.8) 9 (4.1)	120 (55.3) 50 (23.0) 32 (14.7) 15 (6.9)	230 (53.0) 131 (30.2) 49 (11.3) 24 (5.5)
8. Moving or speaking so slowly that other people could have noticed or the opposite	Not at All Several Days More than Half the Days Nearly Everyday	146 (67.3) 48 (22.1) 17 (7.8) 6 (2.8)	137 (63.1) 52 (24.0) 12 (5.5) 16 (7.4)	283 (65.2) 100 (23.0) 29 (6.7) 22 (5.1)
9. Thoughts that you would be better off dead, or of hurting yourself	Not at All Several Days More than Half the Days Nearly Everyday	168 (77.4) 37 (17.1) 5 (2.3) 7 (3.2)	168 (77.4) 26 (12.0) 14 (6.5) 9 (4.1)	336 (77.4) 63 (14.5) 19 (4.4) 16 (3.7)

Table-II. Comparison of Students' responses from Private and Public Medical College on Patient Health Questionnaire (PHQ-9)

Note. n = 434 Medical Students

Questions	Responses	Frequency (Percentages) of Groups		
		MIMC (N=217)	MBBSMC (N=217)	Total (N=434)
1. Anxious Mood	Not Present	55 (25.3)	74 (34.1)	129 (29.7)
	Mild	66 (30.4)	94 (43.3)	160 (36.9)
	Moderate	45 (20.7)	37 (17.1)	82 (18.9)
	Severe	43 (19.8)	10 (4.6)	53 (12.2)
	Very Severe	8 (3.7)	2 (0.9)	10 (2.3)
2. Tension	Not Present	63 (29.0)	55 (25.3)	118 (27.2)
	Mild	46 (21.2)	87 (40.1)	133 (30.6)
	Moderate	45 (20.7)	39 (18.0)	84 (19.4)
	Severe	47 (21.7)	29 (13.4)	76 (17.5)
	Very Severe	16 (7.4)	7 (3.2)	23 (5.3)
3. Fears	Not Present	91 (41.9)	93 (42.9)	184 (42.4)
	Mild	49 (22.6)	67 (30.9)	116 (26.7)
	Moderate	44 (20.3)	31 (14.3)	75 (17.3)
	Severe	19 (8.8)	7 (3.2)	26 (6.0)
	Very Severe	14 (6.5)	19 (8.8)	33 (7.6)
4. Insomnia	Not Present	99 (45.6)	115 (53.0)	214 (49.3)
	Mild	53 (24.4)	62 (28.6)	115 (26.5)
	Moderate	27 (12.4)	21 (9.7)	48 (11.1)
	Severe	17 (7.8)	16 (7.4)	33 (7.6)
	Very Severe	21 (9.7)	3 (1.4)	24 (5.5)
5. Intellectual	Not Present	87 (40.1)	114 (52.5)	201 (46.3)
	Mild	77 (35.3)	50 (23.0)	127 (29.3)
	Moderate	27 (12.4)	40 (18.4)	67 (15.4)
	Severe	18 (8.3)	11 (5.1)	29 (6.7)
	Very Severe	8 (3.7)	2 (0.9)	10 (2.3)
6. Depressed Mood	Not Present	90 (41.5)	89 (41.0)	179 (41.2)
	Mild	49 (22.6)	81 (37.3)	130 (30.0)
	Moderate	38 (17.5)	29 (13.4)	67 (15.4)
	Severe	30 (13.8)	15 (6.9)	45 (10.4)
	Very Severe	10 (4.6)	3 (1.4)	13 (3.0)
7. Somatic (Muscular)	Not Present	134 (61.8)	105 (48.4)	239 (55.1)
	Mild	48 (22.1)	77 (35.5)	125 (28.8)
	Moderate	23 (10.6)	22 (10.1)	45 (10.4)
	Severe	9 (4.1)	11 (5.1)	20 (4.6)
	Very Severe	3 (1.4)	2 (0.9)	5 (1.2)
8. Somatic (Sensory)	Not Present	145 (66.8)	135 (62.2)	280 (64.5)
	Mild	46 (21.2)	60 (27.6)	106 (24.4)
	Moderate	21 (9.7)	13 (6.0)	34 (7.8)
	Severe	1 (0.5)	7 (3.2)	8 (1.8)
	Very Severe	4 (1.8)	2 (0.9)	6 (1.4)
9. Cardiovascular symptoms	Not Present	151 (69.6)	126 (58.1)	277 (63.8)
	Mild	27 (12.4)	68 (31.3)	95 (21.9)
	Moderate	22 (10.1)	17 (7.8)	39 (9.0)
	Severe	13 (6.0)	3 (1.4)	16 (3.7)
	Very Severe	4 (1.8)	3 (1.4)	7 (1.6)
10. Respiratory Symptoms	Not Present	163 (75.1)	158 (72.8)	321 (74.0)
	Mild	33 (15.2)	39 (18.0)	72 (16.6)
	Moderate	6 (2.8)	14 (6.5)	20 (4.6)
	Severe	14 (6.5)	5 (2.3)	19 (4.4)
	Very Severe	1 (0.5)	1 (0.5)	2 (0.5)

11. Gastrointestinal Symptoms	Not Present Mild Moderate Severe Very Severe	129 (59.4) 40 (18.4) 26 (12.0) 17 (7.8) 5 (2.3)	126 (58.1) 56 (25.8) 22 (10.1) 7 (3.2) 6 (2.8)	255 (58.8) 96 (22.1) 48 (11.1) 24 (5.5) 11 (2.5)
12. Genitourinary Symptoms	Not Present Mild Moderate Severe Very Severe	185 (85.3) 21 (9.7) 6 (2.8) 5 (2.3) 0 (0.0)	158 (72.8) 42 (19.4) 5 (2.3) 5 (2.3) 7 (3.2)	343 (79.0) 63 (14.5) 11 (2.5) 10 (2.3) 7 (1.6)
13. Autonomic Symptoms	Not Present Mild Moderate Severe Very Severe	115 (53.0) 76 (35.0) 11 (5.1) 12 (5.5) 3 (1.4)	128 (59.0) 44 (20.3) 39 (18.0) 3 (1.4) 3 (1.4)	243 (56.0) 120 (27.6) 50 (11.5) 15 (3.5) 6 (1.4)
14. Behaviour at interview	Not Present Mild Moderate Severe Very Severe	86 (39.6) 63 (29.0) 36 (16.6) 22 (10.1) 10 (4.6)	105 (48.4) 68 (31.3) 23 (10.6) 11 (5.1) 10 (4.6)	191 (44.0) 131 (30.2) 59 (13.6) 33 (7.6) 20 (4.6)

Table-III. Comparison of Students' responses from Private and Public Medical College on Hamilton Anxiety Rating Scale (HAM-A)
Note. n = 434 Medical Students

Variables	Severity Level	Frequency (Percentages) of Groups		
		MIMC (N=217)	MBBSMC (N=217)	Total (N=434)
Depression	No Depression Minimal Depression Mild Depression Moderate Depression Moderately Severe Depression Severe Depression	8 (3.7) 74 (34.1) 91 (41.9) 28 (12.9) 16 (7.4) 0 (0.0)	19 (8.8) 64 (29.5) 70 (32.3) 53 (24.4) 7 (3.2) 4 (1.8)	27 (6.2) 138 (31.8) 161 (37.1) 81 (18.7) 23 (5.3) 4 (0.9)
Anxiety	Mild Anxiety Mild to Moderate Anxiety Moderate to Severe Anxiety	159 (73.3) 31 (14.3) 27 (12.4)	172 (79.3) 27 (12.4) 18 (8.3)	331 (76.3) 58 (13.4) 45 (10.4)

Table-VI. Cross-tabulation showing Depression and Anxiety Severity Levels between Students of Private and Public Medical College
Note. n = 434 Medical Students

DISCUSSION

Medical profession requires five years of hard work and study. During this period, an undergraduate medical student undergoes different phases of psychological morbidity which not only affect their academic performance but their physical, social and mental health.[13] Various studies have shown data regarding depression and anxiety among medical students.[4-10] Data from different studies suggest that prevalence of depression among medical students in public universities has been estimated to be 48.30% in India[14], and 42.66 % in Pakistan.[15] The prevalence of depression among private medical students, however, has been estimated to be 48.4% in India[16], and 36.9% in Pakistan.[17] These findings suggest that depression is more common in private sector universities.

Our study highlighted that overall prevalence of depression in undergraduate medical students was 62%. This finding is consistent with that by Vankar (64%)[17], and Rawat et al, (58%)[18] but is higher than reported by Kumar et al[16], and Qureshi et al[9], with a slightly higher percentage in private sector medical college. A study conducted in Karachi showed a higher percentage of depression in public sector medical college[19],

but in their study, a significant percentage of students had past history of depression (42.4%) as well which was excluded in present study. Our study pointed out that 49.7 % student from both colleges (29.4 % from public and 20.3% from private sector medical college) suffered from moderate to severe depression. Kumar et al also observed similar percentage (43.5 %) of moderate to severe depression.[16]

75 % students suffered from mild anxiety in both colleges which is close to the results of Sani et al (71.9%)[21], but higher than reported by three other studies.[22-24] respectively. On average, 23.7% of students (26.7% from private sector and 20.7 % from public sector) suffered from moderate to severe form of anxiety in our study which is comparable with findings of Haldorsen[25] but higher than reported by Moutinho and colleagues.[4] The difference in findings could be due to difference in scale being used, demographic characteristics and educational strategies. Our study claimed that private sector medical college students have reported more severe anxiety when compared to public sector medical students.

The strength of this research is that we compared psychological morbidity in terms of anxiety and depression among students in public and private sector medical in comparison to most previous studies which have taken only one variable for comparison. At the same time, inability to infer cause-effect relationships between the analyzed variables and lack of baseline information on students' mental health at the time of admission to medical college and population-based data to corroborate our findings with general population are all limitations of our study.

CONCLUSION

We concluded that prevalence of psychological morbidity (anxiety and depression) was higher among medical students of private medical college as compared to public sector medical college. It is, therefore, proposed that adequate counseling session of the students should be done during their medical study period in order to reduce this burden.

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