ORIGINAL ARTICLE

Depression, Anxiety and Stress in Low and High Achieving Medical Students

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ABSTRACT

Objective: To compare the levels of depression, anxiety and stress between low and high achieving medical students.

Study Design: A cross-sectional descriptive study

Place and Duration of Study: This research was carried out in Islamic International Medical College, Pakistan, from 11th May to 30th December 2018.

Materials and Methods: The study sample comprised of 160 medical students of 2nd, 3rd, 4th and 5th year MBBS classes. Sampling was done by using purposive sampling technique. For comparison, the students were distributed in two groups depending upon their scores in recent professional examination. Low scoring group comprised of 20 students from each class, who scored lowest marks in the recent professional examination and were placed at the bottom of result sheet, while high scoring group comprised of those 20 students who were placed at the top of result sheet in the same class. Demographic data was obtained on a printed form and the depression anxiety stress scale (DASS-21) was used to record clinical variables. Statistical package for social sciences version 20(SPSS-20) was used for analysis of data. Paired sample T-test was used to find the difference in the mean scores of clinical variables between two groups.

Results: The mean score for stress, anxiety and depression was 10.4, 16 and 15 respectively in low achievers. While the high achievers mean scores were 6.2, 8.7 and 9 on these variables respectively, with p-value below 0.05. The results revealed relatively high psychological morbidity in low achieving medical students.

Conclusion: The level of depression, anxiety and stress is found to be higher in low scoring students as compared to high scoring medical students.

Key Words: *Depression, Anxiety, Stress, DASS-21, Low and High Achieving Medical Students.*

Introduction

For the achievement of academic milestones, the psychological and emotional health of students plays an important role. All over the world, medical colleges offer opportunities for intellectual and professional growth to their students. The intended aim is to prepare them as future healthcare professionals. However, these future health care providers undergo a tough journey, leading to psychological issues, which can affect their health, morale and academic performance.[1,2] All over the world the levels of anxiety, stress and depression are higher in medical students.[1-3] In line with global trends, the prevalence of these issues is also higher in Pakistan.[4-6] Stress leads to physiological changes in the brain and body and can present with changes in behavioral profile, which might come and go initially. However, persistent and severe stress, might lead to depression and anxiety. Clinical depression is characterized by persistent sadness, decreased capacity to enjoy, disturbed sleep impaired concentration, and ideas of suicide. Anxiety produces fear of unknown, restlessness, worrying thoughts and palpitation. Many studies have found that the life in medical colleges is quite stressful and can adversely affect the psychological health of students.[6-9] The stressors of medical college can adversely affect the academic progress of the students[10]. Stressful factors commonly reported by students, are burden of studies, less sleep hours, unpleasant physical and emotional environment, poor learning facilities and financial issues.[11] It was found that student with low grades were having

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severe stress, anxiety and depression.[12] As compared to males the female students were found to have higher level of perceived stress and they attributed it to academic burden.[13-14] Some studies found that the students do not seek professional treatment because of fear of stigma. Thus only a small number of students receive professional care.[15-16] Poor psychological health of students leads to poor performance in academics. Follow up studies found that the level of stress in medical students is associated with academic performance of the medical students.[17-18] However, no published study was found to compare psychiatric morbidity and its impact on academic performance in Pakistan. In the light of this knowledge gap a question arises in the mind of all interested stakeholders, and particularly the faculty members of our medical colleges, whether our medical students; whose academic performance is low are suffering from relatively severe psychological morbidity? If found correct then proper measures can be taken to facilitate and help the student and avoid academic failure and associated complications. The objective of this study was to compare level of depression, anxiety and stress between low and high achieving medical students.

Materials and Methods

This was a cross-sectional descriptive study carried out in Islamic International Medical College, Pakistan, from 11th May to 30th December 2018. The study sample comprised of 160 medical students of 2nd, 3rd, 4th and 5th year MBBS classes. After approval of ethics review committee, data collection was done by using purposive sampling technique, by trained psychologists. Forty students were selected from each of the four MBBS classes based on their marks in respective professional examination. The participants were provided with a consent form informing them about the purpose of study and voluntary participation. Confidentiality and comfort was ensured. For the purpose of comparison, the students were distributed in two groups, the low and high scoring groups, which were operationally considered synonym to low and high achieving students, for the purpose of this study. Low scoring group consisted of 20 students, from each MBBS class; who obtained lowest marks in the recent professional examination and were placed at the bottom of result sheet. While high scoring group consisted of 20 students scoring highest marks in the same professional examination and were placed at the top of score board. The Depression Anxiety Stress Scale (DASS-21) was used to measure the clinical variable .e.g. depression, anxiety, and stress. DASS-21 has 21-items, with seven items for each subscale. Students scored each item from 0-3, where zero meant "did not apply" and three meant "applied strongly". Statistical package for social sciences version-20 (SPSS-20) was used to analyze the data and results were compiled accordingly. Keeping the objectives of the study in mind difference in the mean scores of depression, anxiety and stress was calculated. For this purpose paired sample T-test was used to find the difference in the mean scores of clinical variables between two groups. Statistical significance was based upon *P*-value of less than 0.05.

Results

As shown in table-I, 160 students were divided into two groups, with 80 students in each group i.e. low and high scorning student. Out of 160 students, 56(35%) were males and 104(65%) were females. Regarding age, 104(65%) were below 23 years and 56 (35%) were above 23 years. Majority (97.5%) of the students were unmarried. Most of the students attributed their depression, anxiety and stress to their financial problems (46%), followed by study burden (26%).

Table: I Demographic Characteristics of Participants (N=160)

Variables	Frequency	Percentage (%)
1. Age		
Bleow23	104	65
Above 23	56	35
2. Gender		
Male	56	35
Female	104	65
3. Marital Status		
Single	156	97.5
Married	4	2.5
4. Perceived reason for Depression, Anxiety and Stress		
Financial Issues		
Study Burden: Too many lectures/ assignments/assessments	74 42	46.2 26.1
Infrastructure not comfortable (building design/ space, chairs, class rooms, washrooms etc.	15	9.4
Hostel environment not comfortable		
Not enough time for revision	15	9.3
	14	9

Table II: Differences in the Mean Scores of Clinical Variables between two Groups.

Low Scoring (Achieving) Students			High Scoring (Achieving) Students				
Measures	**Mean**	**SD**	**Mean**	**SD**	**df**	**t**	**p**
Psychological morbidity							
Stress	10.4	7.9	6.2	5.5	158	3.9	.000
Anxiety	16	8.6	8.7	6.8	150	5.9	.000
Depression	15	7.2	9	6.8	157	6.8	.000

The mean scores and standard deviations with regard to Depression, Anxiety, and Stress were obtained for both the groups of medical students. As shown in table II, there is statistically significant difference between the mean scores obtained by high and low achieving medical students on Depression, Anxiety and Stress Scale. It means that the low scoring (achieving) medical students had comparatively severe stress, anxiety and depression as compared to high (scoring) achieving medical students.

Discussion

The finding of this research shows a significant difference in psychological morbidity in low scoring medical students, when compared to the high scoring ones. The findings of this study not only substantiate the previous research evidence on the psychological issues in medical students but it also adds a new dimension that the levels of psychological morbidity are comparatively much higher in low achieving medical students. A previous study done in Malaysia concluded that low achieving students had increased depression, anxiety, and stress than high achieving students.[17] The results of this study and previous studies show the significance of psychological morbidity and its negative influence on academic performance of the medical students and the need for prevention of these issues.[18, 21] The perceived stressful factors, reported by students in this study are mainly socioeconomic, burden of various academic activities and problems in physical environment such as uncomfortable living and learning space. It is possible that students, who are depressed and anxious, perceive things differently than those who are healthy. Moreover, the coping skills and personal resilience may also be different in students in both groups. Previous studies have also identified various factors related to physical, social and psychological environment of medical college; which were reported by the medical students having psychological morbidity.[1,8,14,19-21] However, exact cause and effect relationship of those factors, with psychological morbidity, could not be established because of the descriptive nature of our study.

To the best of our knowledge no published study was found in the national literature, with focus on comparison of psychological morbidity in low and high achievers. Therefore, for better understanding and management of psychological issues we need to explore whether the low achieving medical students are depressed and anxious before the respective professional examination. As psychological issues, may lead to poor concentration and difficulty in scoring better marks in the professional examinations. On the other hand it is possible that poor performance in professional examination may act as a stressful event, leading to anxiety and depression. Moreover, some students may be having psychological morbidity before entering the medical college, which subsequently worsens due to pressure of academic demands and adjustment in the new environment. These questions need further reflection and exploration in order to comprehend the precise dynamics of psychological morbidity in future healthcare providers. Therefore, we need further research with larger sample size, multiple settings and appropriate study designs to find the cause and effects relationship of different demographic and psychological variables.

Conclusion

Based upon our finding we conclude that the levels of depression, anxiety and stress are higher in medical students with poor academic performance. This observation provides a useful insight to better understand the higher prevalence of psychological morbidity in academically low performing medical students. It is possible that provision of appropriate psychological support to these students might improve their psychological well-being and academic performance.

Limitations

A relatively small sample size, cross sectional design and single setting are the main limitations, therefore findings of this study cannot be generalized.

Declaration We declare that there was no conflict of interest involved in this research work and we did not receive any funds for its initiation and completion.

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