

# To be in a Medical School May Be Stressful: Prevalence of Depression and Related Factors among Medical Students of a Private Medical School at Faisalabad.

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## ABSTRACT

**Background:** Depression is a growing problem among medical students around the world. This study was held to determine the prevalence of depression and related factors amongst medical undergraduates at Aziz Fatima Medical and Dental College Faisalabad. **Study Design:** A cross-sectional study. **Place and Duration:** In the Department of Psychiatry and Behavioral Sciences of Aziz Fatima Medical and Dental College Faisalabad for Six months duration from July 2019 to December 2019. **Methods:** From a total of 345 students of 3rd, 4th and final year MBBS 285 students were selected using a stratified random sampling method and were assessed by investigators using the Beck Depression Inventory. Males were 35% and females were 65%. **Results:** From a total of 340 students of 3rd, 4th and a final year 285 students participated in the study. 56.50% was the overall depression prevalence among medical students. Most people had mild to moderate depression observed among 80%. This study revealed that among women, depression was noted in 71.35% (132) and among males 29 (29%). 124(43.50%) students were found normal (0-9), mild depression was noted in 42 (14.7%) (10-18), moderate in 58 (20.4%) (19-29), severe in 21 (7.36%) (30-40) according to cut-off scores) and very severe depression was noted in 15 (5.2%) with > 40 cut-off score. **Conclusion:** Depression is very common among medical students. Our conclusions point to the significance of psychiatric awareness and assessment of medical students for common psychiatric problems and the need for interventions like counseling services and other Psychological interventions.

**Keywords:** Medical students, Depression, Beck Depression Inventory.

## INTRODUCTION

Depression and anxiety are two of the most common psychiatric disorders seen in the general population. Medical education poses further stress for medical students who undergo strenuous studies. Depression is the common mental disorder which presents with depressed mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, and poor concentration often accompanied with symptoms of anxiety including physical symptoms (e.g., palpitations, sweating, tremors) and psychological symptoms e.g., fear, apprehension etc.<sup>[1]</sup>

The prevalence of depression and anxiety in developing countries is said to be 10–44%. Depression is the fourth leading cause of morbidity and is predicted to be the second leading cause of morbidity by the year 2020.<sup>[2]</sup> By the year 2020, depression is projected to reach second place ranking

of Disability-Adjusted Life Year (DALY) calculated for all ages and sex.<sup>[2,3]</sup>

To be a student in medical school may be stressful.<sup>[4,5]</sup> Numbers of studies have compared levels of distress among medical students with that of other students.<sup>[7]</sup> Among medical students, academic stressors include the huge volume of material to be learned over a short period of time, academic performance in a competitive environment and evaluation (examination and continuous assessment).<sup>[7]</sup> Academic pursuits take a heavy toll on the mental capacities of all students and medical students are more prone to depression than their non-medical peers.<sup>[8]</sup> Perceived medical school stress has been linked to current mental distress and to forthcoming mental health problems, and is therefore assumed to affect life satisfaction.<sup>[9]</sup> Previous studies have shown relatively high levels of distress, such as symptoms of depression and suicidal thoughts in medical undergraduates.<sup>[10,11]</sup>

Depression in adolescents' medical students is an underreported health issue and In Pakistan, depression among medical students is a neglected public health issue. It is highly significant to avoid the negative impact of depression on educational success and profession, and thus patients care,

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through prompt diagnosis and appropriate measures.<sup>[12]</sup>

In Pakistan, few studies have been conducted on medical students who have shown a high prevalence of depression and anxiety. These studies have been conducted mostly in private medical colleges. Up to 70% prevalence of anxiety and depression has been recorded. Another study in Pakistan found depression in 51% of medical students.<sup>[13,14]</sup> These rates are much higher than western figures, where depression is found in 14% of medical students.<sup>[15]</sup>

Most authors suggest that depression increases during medical training and this increase is more pronounced in women.<sup>[16,17]</sup> Female medical students report more stress and less satisfaction with life than male medical students.<sup>[18]</sup> Among Pakistani female physicians, 34% were found to be stressed, of whom 32% were house officers.<sup>[19]</sup>

However, the rise of depression during medical training is not universally reported: studies show that depression decreases from the first to the second year of medical training, and between preclinical and clinical years. Indeed, Dyrbye et al.<sup>[16]</sup> suggests that this prevalence varies depending on the age of medical students, the stage of medical training, the methodology for evaluating depression and location.

Literature shows that students pressed to select the medical profession are more prone to depression and medical students with higher perceived levels of life satisfaction consider that medical training has a less negative impact on their personal and social lives and was less likely to use maladaptive strategies such as emotion-focused coping, compared to their peers.<sup>[20]</sup>

Depression begins early amongst medical undergraduates and severely disrupts social, psychological and academic functioning, increasing the risk of problems such as suicidal behavior and substance abuse. The increased proportion of depression among medical students is related to several features.<sup>[23]</sup> Social factors such as educational life, family problems, drug addiction including alcohol, history of depression in the family and living away from family were related to depression among medical undergraduates.<sup>[21,22]</sup> Researches show that academically less successful students reported somewhat higher levels of depressive ideation and symptoms.<sup>[21]</sup> This type of research will be advantageous for depressed medical students to take appropriate steps, such as counseling and other psychological measures to help cope better in medical life. Medical student depression was linked to substance abuse,<sup>[24]</sup> suicide and impaired professional function,<sup>[25]</sup> interpersonal skills, professionalism, physical and mental health.<sup>[26]</sup>

## MATERIALS AND METHODS

The aim of our study was to determine the rate of depression among medical students at a medical college in Faisalabad, Pakistan and to observe the

impact of social factors such as their residential status, socioeconomic status, drug dependence, school year, number of friends and life events on the occurrence of depression. Depression is an important contributor to the global burden disease that affects people of communities all over the world.

A cross-sectional study was conducted on MBBS students of Aziz Fatima Medical and Dental College Faisalabad, who had spent more than 02 years in medical school from the beginning of MBBS class.

### Questionnaire and measurements:

A semi-structured pro forma was designed to collect demographic information from the students. It included variables like age, gender, year of study, marital status, both parents' occupation, area of residence (local-expatriates), accommodation of the students (boarders- nonboarders), number of siblings and other family members, number of friends, previous history of psychiatric disorders, family history of depression or other psychiatric illness and history of important life events. The questionnaire also covered social factors such as class, alcohol consumption, drug addiction, family problems, depression in the family and being out of the home.

For the purposes of this study, anyone who has consumed alcohol at least once in the last 12 months was considered an alcohol consumer. The family problem was assessed, asking if there were any problems (financial or psychosocial) within the family and family members worrying about this problem. Drug dependence is defined as the frequent usage of any psychoactive substance, or substances socially or morally or legally prohibited (such as cannabis, alcohol, morphine or, heroin) and a person feels an obligation to take the favored substance and has pronounced trouble involuntarily modifying or ceasing use of that drug substance.

The depression in family history was determined by the presence of depression in 1st- or 2nd-degree relatives. Important life events were independent events occurring over the previous 6 months and included success or failure in examinations, celebrations and loss of friends or close relatives. Successes and failures were categorized as positive and negative events. No objective scale was used to qualify life events and the participants evaluated these subjectively.

The probable sample size was at 340, with a predominance of 20% and an accuracy of 20%. To increase representation in the sample of each year of study, we initially split the sample into years of study and medical students, and then students were selected randomly based on the proportional size to each stratum to select overall 285 students. Therefore, medical students were selected randomly from 3rd year to the final year.

The study was approved by the Institutional Ethical Review Committee. Subsequently, after gaining permission from the Head of the institution, undergraduates were allowed to assemble data. The

objectives of the study were explained to each participant and informed consent was obtained for inclusion in the study. Privacy was ensured and the option of refusing to contribute in the analysis is granted deprived of any further requests or questions.

Subsequently, conversant oral consent was taken from all designated contributors. A student who refuses to partake in training or is not present on the day of study and/or is unable to communicate even after 2 appointments were considered non-respondents.

**Study tool:**

Beck depression inventory (BDI) was our tool to measure depressive symptoms of the students<sup>38</sup>, which was validated and tested. This is a subjective scale and the goal is to detect depression and estimate depression-related factors grounded on a cut-off value of ten or more. This is a 21-item measure and is the most commonly applied tools for distinguishing depression symptoms. Normal adults, mentally challenged people and adolescents (13 years of age or above) can also be assessed by this tool. It is intended to record various symptoms of depression proficiently by a person during the last week. Answers to 21 questions are given on a four-point scale from zero to three (total results can vary from 0 to 63). Beck depression inventory (BDI) measures mood, pessimism, sense of failure, self-dissatisfaction, guilt, punishment, self-dislike, self-

accusation, suicidal ideas, crying, irritability, social withdrawal, body image, work difficulties, insomnia, fatigue, appetite, weight loss, bodily preoccupation, and loss of libido. Items one to thirteen measure symptoms that are psychological in nature, while items fourteen to twenty-one measure more physical symptoms. The data were analyzed and entered using SPSS 20.0 for Windows. A chi-square test was applied to assess the relationship between depression and variables and Univariate analysis was achieved. Data is articulated as a percentage or percentage.

**RESULTS**

Of the 285 medical undergraduates who contributed to the study, 100 (35%) are men and 185 (65%) are women. The relationship between the grade of depression and gender was not significant statistically (p = 0.32). 56.50% was the overall depression prevalence among medical students. Most people had mild to moderate depression observed among 80%. This study revealed that among women, depression was noted in 71.35% (132) and among males 29 (29%). 124(43.50%) students were found normal (0-9), mild depression was noted in 42 (14.7%) (10-18), moderate in 58 (20.4%) (19-29), severe in 21 (7.36%) (30-40) according to cut-off scores) and very severe depression was noted in 14 (4.91%) with > 40 cut-off score [Table 1].

**Table 1: Grades of depression according to sex**

Grades of depression (Score)	Female	(%)	Male	(%)	Total	(%)
Denial (0-4) 39	20	10.81%	5	5%	25	8.78%
Normal (5-9)	53	13.51%	71	71%	124	43.50%
Mild (10-18)	36	19.45%	6	6%	42	14.7%
Moderate (19-29)	51	27.56%	7	7%	58	20.4%
Severe (30-40)	13	7.02%	8	8%	21	7.36%
Very severe (>40)	12	5.94%	3	3%	15	5.3%
Total	185		100		285	
P=0.29						

**Table 2: Grades of depression according to classes**

Grades of depression	3rd year	4th year	Final year	Total
Denial (0-4)	15	5	5	25
Normal (5-9)	65	35	24	124
Mild (10-18)	9	21	20	50
Moderate (19-29)	7	27	16	50
Severe (30-40)	4	8	9	21
Very severe (>40)	3	7	5	15
Total	90	103	79	285
P<0.001				

**Table 3: Prevalence of depression according to associated factors**

Determinants	Number of students	Number of students with depression	Prevalence (%)	P-value
<b>Sex</b>				
Male	100	25	25%	0.72
Female	185	140	75.67%	
<b>Alcohol use</b>				
Present	0	0	0	0.07
Absent	285	285	100%	
<b>Drug addiction</b>				
Present (smoking)	15	8	53.3%	0.735
Absent	270	160	59.25%	
<b>Family problems</b>				
Present	93	52	55.9%	0.04*
Absent	192	120	81.2%	

Staying in hostel				
Yes	110	57	51.82%	0.63
No	175	52	29.71%	
Staying in apartments and rented house				
Yes	80	42	52.5%	0.08
No	205	65	31.70%	
Family h/o depression				
Present	123	51	41.46%	0.02*
Absent	162	50	30.8%	
*P value less than 0.05 is considered as significant				

In the 3<sup>rd</sup> year and 4<sup>th</sup>, 11.9% of medical students were categorized as suffering from moderate depression. The incidence of moderate depression amongst third- and fourth-year students was 17% and 7.36%. The difference between the year of the study and the grade of depression was statistically important ( $p < 0.001$ ) [Table 2].

It was found in a univariate analysis that the incidence was high and significant amongst medical undergraduates with family issues ( $p = 0.04$ ). Correspondingly, people with a family history of depression have an increased incidence than students with a negative family history ( $P = 0.02$ ). There were no noteworthy differences in the depression prevalence amongst students with other factors related to depression [Table 3].

## DISCUSSION

Medical colleges have long been recognized as involving numerous stressors that can affect the well-being of students, and depression is a global problem that reflects the mental health of the population. A lot of researches reported depression among medical students as they are going to suffer from academic stressors such as information input overload, lack of leisure time and academic evaluation (exams and continuous assessments) and simultaneously need to adjust for a new environment.

In this analysis, the Beck Depression Inventory was used to determine the frequency of depression amongst medical undergraduates. Though not intended for diagnostic determinations, its epidemiological benefits were assessed in several studies that were considered to be a dependable and important tool for identifying depressive ailments in non-clinical inhabitants. Some studies confirm the use of the Beck Depression Inventory in predicting and measuring depression in adolescents. As far as we know, there are few studies that would use the BDI to measure depression amid medical undergraduates in Pakistan, and there was no study conducted in Aziz Fatima medical college Faisalabad previously to measure depression in medical students.

In a different study of high school and college students in Iran, 34% were depressed according to the final BDI score of 16. This study showed that the incidence of depression was advanced amongst medical undergraduates as compared to earlier analysis.<sup>[24]</sup> This is mainly due to the inclusion of a

mild degree of depression in the lower cut off for the BDI result in our study. Over 80% of students in our study have mild to moderate depression. Other prospects comprise alterations in the demographic structure of our students and even increased competition in medicine.

Socio-demographic aspects such as occupation, family income and education have not been assessed due to feasibility constraints. This study provides information on the scale of depression among medical students and related factors that can be assessed through more detailed studies using quantitative and qualitative approaches. Because this is a cross-sectional study, it is difficult to evaluate the direction of the effect and prevents us from drawing conclusions based on the results of our research. However, sufficient sample size and the use of an appropriate scale to classify student's depressive symptoms upsurgues the importance of research.<sup>[15]</sup> Depression is very common amongst medical undergraduates. The statistic that 7.5% and 6.7% of medical undergraduates suffer from severe and very severe depression indicates that a medical advisory group should be taken at medical school. Our findings emphasize the significance of detecting these susceptible populace and captivating suitable intervention measures to avert depressive complications.

Students of medicine are required to learn a vast amount of material in a small frame of time, which leads to a lot of stress.

This study strengthens the need that institutions recognize that the population of medical students is vulnerable to depression and other mental health illnesses. We must reflect and act because depression in medical students has personal cost to them, future costs to organizations, and health care costs to patients.

### Limitations

The generalizability of the study results is limited by the characteristic of the sample, which was recruited from a single private medical school. The cause-effect association between the studied psychological variables and depression cannot be made from the study. Other limitations include lack of baseline information concerning the mental status of medical students at the time of entrance in the medical school and lack of population-based data to support our results and to compare our findings with the general population.

## CONCLUSION

Depression is very common among medical students. Our conclusions point to the significance of psychiatric awareness and assessment of medical students for common psychiatric problems and the need for interventions like counseling services and other Psychological interventions.

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