

Depression and its Associated Factors in Medical Students: A Cross Sectional Study

UMAR AHSAN¹, RANA MOZAMMIL SHAMSHER KHAN², ANSAR LATIF³, SOBIA HUSSAIN⁴

ABSTRACT

Aim: To assess depression and its associated factors in medical students.

Methods: The cross-sectional study was conducted at Government Khawaja Muhammad Safdar Medical college Sialkot from march to April 2016. 200 medical students of 3rd and 4th year MBBS were included. Students suffering from severe medical, surgical, psychotic illness and any general medical illness effecting brain directly or indirectly were excluded. Written informed consent was taken. Beck Depressive Inventory-II was administered. Data was analyzed by using SPSS version 21.

Results: There were 102 students from third year and 98 students from fourth year. The mean age of the students was 21.8 ± 1.91 years. There were 72(36%) males and 128 (64%) females. Out of the total 200 students 67(33.5%) were suffering from depression. Mild depression was present in 33 (17.5%) students. Moderate depression was present in 25 (12.5%) and severe depression was present in 9 (4.5%) students. Pearson correlation test was then applied. *p* value was set at <0.05. It showed a significant association of depression with gender (*p*=0.02) failure in examination (*p*=0.03) and family or past history of psychiatric illness (*p*=0.02). There was no association of depression with age (*p*=0.17), economic status of the family (*p*=0.06) or residence of the student (*p*=0.24).

Conclusion: About one third (33.5%) of the medical students were suffering from depression. Depression was associated with socio-demographic and academic variables explained in results.

Keywords: Medical students, Depression, Beck Depressive Inventory-II. Female gender

INTRODUCTION

Students who are studying in medical colleges are usually brilliant and shining in their previous studies. During the course of getting medical education they pass through lengthy time periods of learning in tough conditions. The course of getting an undergraduate medical degree is approximately 5 to 6 years in most of the countries. During this period student may pass through a lot of stress.¹ Stress may lead to psychological and physical problems in the health of the medical students. After entering a medical college they pass through different stages of transformation from being a student of basic sciences to clinical sciences acquiring knowledge and skills along the way. They experience different and difficult learning situations and practices from first to final year of undergraduate medical degree. There are also thoughts and uncertainties of getting a house job

or internship and good slot if they are interested in post graduation and specialization. Long hours of study and little time for leisure activities may also negatively affect the health of the medical students. Medical students with physical or psychological health problems may suffer from difficulty in learning. Stress of getting better grades and passing multiple and continuous examinations and assessments during the course of study may lead to mental health problems in medical students¹.

Many studies have looked at the mental health of medical students undergoing training in medical schools and colleges and have found significant level of stress leading to psychological problems². Hard and harsh style of training may lead to psychological illnesses in medical students³. Worldwide many studies have been carried out to assess the impact and effects on the mental health of different medical students. Many studies have reported high rates of depression as well as anxiety and other psychiatric disturbances in medical students⁴⁻⁶. Depression is a major psychiatric illness in community. It is one of the major causes of morbidity in the world. It has been observed that medical student go through higher stress levels than other people even when the effect

¹House Officer, Department of Surgery,

²Assistant Professor Psychiatry & Behavioural Sciences,

³Associate Professor of Surgery,.

⁴House Officer, Psychiatry & Behavioural Sciences, Government Khawaja Muhammad Safdar Medical College, Sialkot.

Correspondence to Dr. Rana Mozammil shamsher Khan
Email: ranamozi@yahoo.com Cell: +923338607078.

of age or gender is controlled^{7,8}. Different studies have reported different rates of depression from different countries and social and cultural settings. A study from England conducted on medical students found that 16% of them suffer from some psychiatric illness. As far as depression is concerned it was 14-24% in the same study.⁹ In Pakistan rates of depression in medical students reported vary in different studies. A study conducted in a public sector medical college in Multan on 482 medical students found rates of depression as well as anxiety to be 43.89%¹⁰. Other studies reported rates of upto 60-70%.^{5,6} It was also found in this study that depression in medical college was related to being a female medical student, history of depression in family, grief and drug abuse⁵.

It is imperative to study the physical as well as psychological health of students in medical schools and colleges so they do not suffer from various ailments during the period of their medical studies, learning new skills, grooming themselves and becoming mature and better physicians. No study has been done in our college up till now on this very important subject so we planned to carry out the current study. The objective of the current study was to assess depression and its associated factors in medical students.

MATERIAL AND METHODS

The study was conducted at Government Khawaja Muhammad Safdar Medical College Sialkot from March to April 2016. Ethical guidelines set in the declaration of Helsinki were followed. Medical students in 3rd and 4th year M.B.B.S. were included in the study. It is a public sector medical college and strict open merit policy is followed by the government. Non-probability convenience sampling technique was used. It was a cross sectional study. Inclusion criteria were being medical student irrespective of gender and above the age of 18 years. Exclusion criteria were students suffering from severe medical or surgical illness, psychotic illness, any general

medical illness effecting brain directly or indirectly and students refusing to take part in the study. A total of 209 medical students were approached. 3 students were suffering from severe medical illness. They were excluded from the study and referred to medical

department for treatment. 2 students were found to be suffering from psychotic disorder. They were excluded from the study and prompt treatment was started. 4 students refused to give written informed consent so they were excluded. The demographic characteristics of these 9 students were not very different from rest of the students. In the final analysis 200 medical students were included. Written informed consent was taken. Purpose along with title of the study was explained to all the participating students. Students were assured of the confidentiality of their data. They were also offered treatment if they were found to be suffering from illness.

Beck Depressive Inventory-II (BDI-II)¹¹ was then administered. Its English version was used as all participating medical students were well versed in English language because their medium of instruction and medical teaching is in English language. BDI-II is an instrument which has been used extensively in research worldwide. It is self-administered and easy to use. It has 21 items. Each item is scored on a 4 point Likert scale from 0 to 3. The minimum score can be 0 while the maximum score can be 63. Its cut off score is 14. Scoring was done according to the internationally used criteria. A total score range from 14-19 is classified as mild depression. 20-28 is classified as moderate depression. 29-63 is classified as severe depression. The cronbach's alpha for the current study was .87. A data sheet was designed to collect demographic along with social and educational details of the students. All the students were unmarried. All students provided information on the data sheet regarding age, gender, economic status of the family, residence, failure in recent examination, family or past history of psychiatric illness. Statistical analysis of the collected data was done by using SPSS version 21. For continuous variables Mean±SD were applied. Frequency and percentages were calculated for categorical variables. Pearson correlation with *p value* of less than 0.05 for significance was used for association of depression with socio-demographic and academic variables.

RESULTS

There were 102 students from third year and 98 students from fourth year. The mean age of the students was 21.8±1.91years. All the students were

unmarried. There were 72 (36%) males and 128 (64%) females. The preponderance of female medical students may be due to open merit policy. Open merit is the criteria for admission to public sector medical colleges in Punjab. There is equal opportunity for either gender to get admission in a public sector medical college. Most of the medical students belonged to middle income class 60% while 18.5% were from lower and 21.5% from upper income class families. 59% were living in college hostels while 26% were living in rented houses or apartments. 15% of the students were day scholars. Only 14% had failed in one or more subjects in the last annual examination. 11% of the students had family or past history of psychiatric illness. Further details are shown in table 1.

Table 1: Characteristic of the students (n=200)

Variable	Frequency	%age
MALE	72	36
FEMALE	128	64
Economic status of the family		
Lower	37	18.5
Middle	120	60
Upper	43	21.5
Residence		
Hostel	118	59
Day scholar	30	15
Rent	52	26
Failure in examination		
Yes	28	14
No	172	86
Family or past history of psychiatric illness		
Yes	22	11
No	178	89

Table 2: Frequency of depression in medical students (n=200)

Severity of depression	Frequency	%age
Mild	33	17.5
Moderate	25	12.5
Severe	9	4.5
Total	67	33.5

Out of the total 200 students 67 (33.5%) were suffering from depression. Mild depression was present in 33 (17.5%) of the students. Moderate depression was present in 25 (12.5%) and severe depression was present in 9 (4.5%) of the students. 133 (67.5%) of the students did not have depression at the time of administration of BDI-II. The details are shown in table 2.

Pearson correlation test was then applied. *p* value was set at <0.05. It showed a significant association of depression with gender (*p*=0.02) failure in examination (*p*=0.03) and family or past history of psychiatric illness (*p*=0.02). There was no association of depression with age (*p*=0.17), economic status of the family (*p*=0.06) or residence of the student (*p*=0.24). For details see table 3.

Table-3: Variables associated with depression

Variables	1	2	3	4	5	6	7
Gender	-	.07	-.08	.06	.67	-.33	.02*
Age		-	.25	.21	.06	.25	.17
Economic status of the family			-	-.26	-.31	.11	.06
Residence				-	-.18	.27	.24
failure in exam					-	.37	.03*
Family or past history of psychiatric illness							.02*
Depression							-

*significant *p*<0.05

DISCUSSION

Out of the total 200 students in current study 67(33.5%) were suffering from depression. Mild depression was present in 33(17.5%) students. Moderate depression was present in 25(12.5%) students and severe depression in 9(4.5%) students. Two studies carried out in private sector medical colleges in Karachi have reported higher rates. One study reported rate of 70%⁵. The second study reported it to be 60%⁶. Another study from a public sector medical college in Multan reported rates of 43.89%¹⁰. The rate reported in our study from a public sector medical college corroborate with rates from a public sector medical college. A study conducted in India reported rates of depression to be 39.9% in medical students which are similar to rates reported in our study¹². There was no significant association of age with depression in our study. Medical students in our study were almost of the same age. Other studies have also reported similar findings. The study from Multan also shows similar result⁵.

Our study shows a significant association of female gender with depression in medical students.

The studies reported worldwide have shown a female preponderance in depressive illness. Studies carried out in west have shown female preponderance in female students⁷. This may be due to the fact that there is wider agreement and a lot of studies carried out in general population and in community have shown higher rates of depression in females as compared to males. The higher rates in female medical students can be due to these general factors related to female gender and can be specific to being a female undergoing stress of medical education, learning, duty hours or other factors which are needed to be explored further.

Economic status of the family did not show any association with depression in our research. A study carried out in Karachi also reported no association of family economic status with depression in students⁷. This corroborates with findings in our research. Furthermore our college is a public sector medical college with very economical and low tuition fee. Many students are supported by various scholarships from the government and other agencies. The amount of scholarships and financial assistance covers some of the fee and other expenses. Financial help from family is either not needed or if needed is very minimal. This may explain lack of association of family income with depression in our setup. Most of the students 59% in our research were living in hostel. Our study did not find any association between residence of students and depression. A study from Nepal has reported higher rates of depression and stress in students who lived in hostel¹³. Although rate of failure in annual examination was low, 14% to be precise, it was associated significantly with depression in our study. A study from Nepal and other from India corroborate our findings^{12,13}. Our study fails to show whether poor academic performance lead to depression or depression lead to poor performance in studies leading to failure in annual examination. Other studies have shown association of poor performance in medical education with stress¹⁴. The cause and its effect relation in this regard is not proven in our research. Family or past history of psychiatric illness was associated with depression in our research. This is in accordance with the research carried out in Karachi⁵.

Our study has its strengths and some limitations. The instrument we used to screen for depression is

used worldwide and has proven its effectiveness and ease of use over the years. English language version was used because every student was well versed in English. Limitations of the study are cross-sectional nature and sample of students is from only one medical college in public sector. The results may be difficult to generalize to other medical institutions or population as a whole. We included students from 3rd and 4th years only. Information regarding their health status was not known when they started medical education and also in the first 2 years of education. Depression may hinder the performance of medical students leading to morbidity and even mortality. Studies have reported association of depression with impairment to work¹⁵, suicide¹⁶, dropping off from studies^{17,18} and problems in relationships¹⁹. In the light of current study it will be beneficial for students if they are screened for various health related problems at the time admission to medical college. Services should be set up to monitor and support medical students regarding their health, studies, well being and grooming.

CONCLUSION

Out of the total 200 medical students 67 (33.5%) were suffering from depression. Mild depression was present in 33 (17.5%), moderate depression in 25 (12.5%) and severe depression in 9 (4.5%) medical students. There was significant association of depression with female gender, failure in examination and family or past history of depression. Depression was neither associated with age and residence of the medical student nor with economic status of the medical student's family.

Disclosure of interests: The authors declare no conflicts of interest.

Source of funding: No funding was received for this study.

Disclaimer: We declare the abstract and article has not been previously presented or published in a conference, or other relevant information.

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