



## LEVEL OF DEPRESSION AMONG MEDICAL STUDENTS: A CROSS SECTIONAL STUDY

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### ABSTRACT

**Introduction:** The system of medical education is depressing. Numerous research across the world have focused on that the students of medical pursuing profession are subjected to outrageous depression which cause psychological illness like anxiety, depression and also it may give rise to suicidal thoughts. The aim of this study is that it will increase awareness of depression among medical students. **Objective:** To study the level of depression among undergraduate medical students of private medical colleges in Karachi, Pakistan. **Study design:** Cross-sectional study. **Setting:** The study was conducted at different private medical colleges, Karachi in August 2017 till January 2018. **Material and Methods:** A cross-sectional study was organized on randomly selected private medical colleges of Karachi. Sample size

of 181 was calculated by using software SPSS version 22. A close ended, self-administered, modified form of standardized questionnaire was used which was comprised of 2 parts. First part included collection of socio-demographic data, second part had questions for the assessment of depression. Hamilton Depression Scale (HAM-D) was utilized in scoring the depression level in the study subjects. **Results:** Among 181 medical students, 78 (43.1%) were normal. 53 (29.3%) presented with mild depression, 30 (16.6%) had moderate

depression, 8 (4.4%) had severe and 12 (6.6%) were found to be severely depressed which were highly statistical significant. **Conclusion:** In the present study, rate of depression was higher in medical students. It is recommended in future that depression reducing intervention needs to be encouraged in professional program.

**KEYWORDS:** Depression, Hamilton Depression Scale (HAM-D), Medical students, Student mental health.

## INTRODUCTION

Medical students are presented to higher levels of mental and emotional disturbance during their academic and clinical study that have been shown to contribute to abnormal amount of anxiety, stress and depression. The medical curriculum may contribute to the high prevalence of psychological illness among medical students.<sup>[1]</sup> An ongoing meta-investigation demonstrated that depression influences one third of medical students around the world and it is also expected that the increase prevalence of depressive symptoms among medical students is higher than that reported in the standard populace.<sup>[2,3]</sup> Medical students with depressive illness also suffer from other psychological issues, inclusive of burnout, anxiety, suicidal thoughts and substance abuse.<sup>[4,5,6]</sup> Studies proposes that psychological wellbeing deteriorates during their medical education and keeps on declining when learners enter the workforce.<sup>[7,8]</sup> In 1946, the WHO defined health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”, a definition apparently relevant today.<sup>[9]</sup> Evidence proves that brain biochemistry is a momentous factor in depressive illness. It is familiar, for example, that individuals with major depressive illness typically have impairment in the regulation of certain brain chemicals, called neurotransmitters. Neurotransmitters are chemicals that carry signals to your brain and nerves. When the messages are not delivered correctly depression and other mental and physical problems can occur. Depression can be experienced by a normal human; an unavoidable part of existence, feelings of hopelessness, grief, frustration, inadequacy, typically accompanied by a lack of energy, discouragement, low self-worth and negative reactions to loss and change are the dark threads interwoven in life.<sup>[10]</sup> The level of study of medical students are notoriously stressful and competitive, requiring long hours of studying, training and practice which ultimately have an effect on physical and psychological well-being of medical students. Students are overloaded with an enormous amount of information, having a limited amount of time to memorize all the information studied. Overloaded information creates a feeling of

disappointment, inability to handle all the information and increased incidence of errors which ultimately break the stability of the student's wellness and result in illness, disturbed sleep cycles, insomnia, lethargy, and nausea. In female medical students, menstrual cycle changes radically. Moreover, metabolism is disturbed by constipation or diarrhea experienced by students in examination period.<sup>[11]</sup> In India 62% of medical students was witnessing depression. Studies done at two large universities in Ankara, Turkey, showed that the prevalence of depression among medical students was 13.8% respectively.<sup>[12,13]</sup> The main objective of our study is that it will increase awareness and consciousness of depression among medical students in private medical colleges of Karachi.

## MATERIAL AND METHODS

A cross-sectional study was conducted on medical students of randomly selected medical colleges of Karachi in August 2017 till January 2018. The sample size was 181 of medical students. By taking written informed consent and conserving anonymousness, the tool use for data collection is a close-ended, self-administered, a modified form of standardized questionnaire which comprise of 3 sections.

- Socioeconomic data.
- Depression related questions.
- Their strategies adopted by students and their outcomes.

The other part of the study which have objective variables which will be used to determine severity of common depressive symptoms of medical students of Karachi. This objective will be assessed by Hamilton Depression Rating Scale (HAM-D). The original 1960 version contain 17 items (HDRS-17). For 17 items version, a score of 0-7 is considered to be normal, score of 20 or higher indicate moderate, severe or very severe depression. The Ethical Approval was taken from the ethical committee of United Medical and Dental College, Karachi. The inclusion criteria for this survey include undergraduate Medical students of any gender of Karachi, between 18-30 years of age.

The exclusion criteria for this survey includes students having any chronic life threatening disease, students having any psychological disorder, students having family history of psychological disorders, students who refuse to give written consent.

## STATISTICAL ANALYSIS

Data was fed into the computer using Statistical Package for Social Science (SPSS) software program version 22. Data will be presented using descriptive statistic in the form of frequencies and percentage for qualitative variables.

## RESULTS

The most widespread illness commonly called the “Common cold of mental disorder” is depression, ranked 3<sup>rd</sup> significant cause of global disease burden which affected more than 300 million people of all ages (WHO, 2012). A total of 181 medical students participated in this cross sectional study. The sample size has been estimated by Hamilton Depression Rating Scale (HAM-D). The original 1960 version contain 17 items (HDRS-17) but from other questions not added to the total score, were used to provide additional information. Each item on the questionnaire on a 3 Or 5-point scale, depending on the item and the total score is compared to the corresponding description. In medical 43 students were of age ranged between 17-20 years, 130 between 21-24 years and 8 were above 25 years. The mean age for medical students was  $21.81 \pm 2.04$ . Out of total 181 medical students, 65 were male and 116 were females. Female students were dominated in medical colleges. In medical 180 students were single while 1 reported as married. In medical 23,19,35,80 and 24 students were of 1<sup>st</sup>, 2nd, 3rd, 4th and final professional year respectively. 125 medical students had yearly system and 56 had semester system curriculum (Table 1). Among 181 medical students, 78 (43.1%) were normal. 53 (29.3%) presented with mild depression, 30 (16.6%) had moderate depression, 8 (4.4%) had severe and 12 (6.6%) were found to be severely depressed which were highly statistical significant. (Table 2).

**Table 1: Variables of age, gender, religion, marital status, professional year & system curriculum.**

| Variable                      |            | Medical Student(n=181) | P value |
|-------------------------------|------------|------------------------|---------|
| Age (in Years) Means $\pm$ SD |            | 21.81 $\pm$ 2.04       | .000    |
| Gender                        | Male       | 65                     | .000    |
|                               | Female     | 116                    |         |
| Religion                      | Muslim     | 177                    | 0.044   |
|                               | Non-Muslim | 4                      |         |
| Marital Status                | Single     | 180                    | 0.317   |
|                               | Married    | 1                      |         |
| Professional Year             | 1st year   | 23                     | .000    |
|                               | 2nd Year   | 19                     |         |
|                               | 3rd year   | 35                     |         |
|                               | 4th year   | 80                     |         |
|                               | 5th year   | 24                     |         |
| System curriculum             | Semester   | 56                     | .000    |
|                               | Yearly     | 125                    |         |

**Table 2: Level of depression among undergraduate medical students (Based on Hamilton Depression Scale).**

| Depression Scale | Medical Students |            | P-value |
|------------------|------------------|------------|---------|
|                  | Count            | Percentage |         |
| Normal           | 78               | 43.1%      | .000    |
| Mild             | 53               | 29.3%      |         |
| Moderate         | 30               | 16.6%      |         |
| Severe           | 8                | 4.4%       |         |
| Very Severe      | 12               | 6.6%       |         |
| TOTAL            | 181              | 100.0%     |         |

**p < 0.005 significant difference by t-test**

## DISCUSSION

Students of medical colleges go through higher levels of mental and emotional disturbance. They are expected to show proficiency of a huge amount of knowledge and skill so they undergo regular pressure and the overwhelming burden barely leaves them to relax. Along with the academic burden, they face a highly competitive environment that requires social and personal sacrifice.<sup>[4]</sup> Depression can be experienced by a normal human; an inevitable part of existence, grief, feeling of hopelessness, frustration, inadequacy, typically accompanied by lack of energy, discomfort, low self-worth and negative reactions to loss and changes are dark threads interwoven in life<sup>[10]</sup>. A recent study in Egypt reported that as high as 71 % of university students were having mild depression and around 38% with moderate level of depression. In India 62 % of medical students were witnessing depression. Studies done at two large universities in Ankara Turkey showed that prevalence of depression among medical students was 13.8%.<sup>[13,14]</sup> A snapshot study found a 43.9% prevalence of anxiety and depression in medical students, comparatively the prevalence of depression was found to be much high with approximately 73.8% of students suffering from depression.<sup>[15]</sup> There is high rate of competition in medical studies. Students with the high IQ and high scores are selected for the admission in medical colleges. They have to spend many hours in these studies with less social interaction. For achieving good grades the long hour studies affect the personal life of the medical students which leads to personal and physical disturbances such as they are not satisfied with their height, weight and complexion. They experience sleep and appetite disturbances during their student life. To cope up with these problems medical students adapt different methods which are harmful. Students take recreational drugs, smoke, use alcohol and play video games to suppress depression. The present study matches with the study of Stewart *et al* 2017 who observed depression among medical students is increase and is

associated with chronic medical condition.<sup>[16]</sup> According to the study conducted in Brazil by Fernanda *et al* 2012, medical students with higher levels of depression and anxiety symptoms which were 41%.<sup>[17]</sup> This showed the higher rates of depression of medical students.

## CONCLUSION

We concluded from this study that depression was prevalent in medical students. The awareness among medical students about depression was better. Depression among third and fourth year was high in medical students. Therefore it is advised to assign specific elements in education curriculum and motivate students to relief the stress. Therefore more programs for students welfare and counseling should be initiated. This study was done in selected private medical colleges of Karachi on a small scale, more such studies should also be done in different cities of Pakistan so that awareness should be provided properly to the medical students.

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