

**Prevalence of Depression Among Medical Students A Cross
Sectional Study in Chitradurga.**

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ABSTRACT

Background: Depression is defined according to the WHO as a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness, and poor concentration. One-fourth to one-third of the post-graduate medical trainees and residents develop clinical depression at some point in their training period although much higher rates were reported in some other studies.

Objective: To evaluate the prevalence of depression along with its different degrees among the medical students in Basaveshwara Medical College and Hospital.

Material and method: This study was performed on 120 medical students according to inclusion and exclusion criterias. The ‘Hamilton Depression Rating Scale (HAM-D)’ was used for evaluating depression.

Result: The prevalence of depression among the medical students is 37% (mild depression-16%, moderate depression-14%, severe depression-7% and lastly very severe depression -0%) in Basaveshwara Medical College and Hospital.

Conclusion: This study shows that the medical students are suffering from psychological distress which is leading them into depression. This issue

should be properly addressed because of its possible impact on quality of health care services in teaching hospitals and on training outcome

Keywords: Depression, Prevalence, Hamilton Depression Rating Scale

INTRODUCTION

Depression is defined according to the WHO as a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness, and poor concentration (Marina Marcus et al, 2014). The term depression has been used variously to describe an emotional state, a syndrome, and a group of specific diseases. When seen as a part of a syndrome or disorder, depression has autonomic, visceral, emotional, perceptual, cognitive, and behavioral manifestations. As a non-pathological ubiquitous mood state lasting from hours to days, but sometimes longer, feeling of depressive are synonymous with feeling sad, blue, down in the dumps, unhappy and miserable. Depressed mood is common and appropriate following a disappointment or loss (Benjamin J. Sadock et al, 2000). According to WHO, Depression has been ranked fourth in the list of most urgent health problem Worldwide (Akiskal HS et al, 2004).

Health is not merely an absence of disease or infirmity but is a state of physical, mental and social well-being. Mental health refers to a broad array of activities directly or indirectly related to the mental well-being component included in the World Health Organization's definition of Health. Mental Health problems are a major public health concern due to their high prevalence rates, difficulties related with identification, treatment and their tendencies to become chronic. One of the mental disorders which have a particularly high prevalence is depression (Ramesh K et al, 2014). According to World Health Organization (WHO), depressive disorders are the fourth

leading health problem in the world. Bartlett pointed out there are immense empirical support for the belief that anxiety and depression impacts adversely on physiological and mental health (Bartlett D et al, 1998). A student of medical course has to read many hours a day routinely to understand vast field of study. Family and society has very high expectations from them (K. Modi et al, 2013). Studies, related to anxiety and depression among students of such professional courses, have been reported from abroad, but such data from India is scarce. Medical school is recognized as a stressful environment that often exerts a negative effect on the academic performance, physical health and psychological well-being of the student (Khan MS et al, 2006). Among medical students, academic stressors include the volume of material to be learned, academic performance and evaluation (examination and continuous assessment). Academically less successful students reported somewhat higher levels of depressive ideation and symptomatology (Stewart SM et al, 1995). The potential negative effects of emotional distress on medical students include impairment of functioning in classroom performance and clinical practice, stress-induced disorders and deteriorating performance (Malathi A et al, 1999), (Bramness JA et al, 1991). Among all physicians, resident doctors have an exceptional position. Residency training is a stressful course with frequent encounters with severely ill patients, lengthy work hours, persistent threat of being sued by patients, and a need to study regularly to keep up to date. These factors make them vulnerable to depression (Sadeghi M et al, 2007). In a multi-Centre study to find out the prevalence of depression among medical students

METHODOLOGY

This study was carried out in Basaveshwara Medical College and Hospital, chitradurga.

- i. It was a cross-sectional population-based study.

ii. Simple random sampling and voluntary participation of the subjects. iii. The written and informed consent of the subjects was obtained prior to collection of data.

iv. Strict confidentiality was maintained regarding the subjects and their data's.

v. Background information of all the subjects about their age, family, marital status as well as was their various academic aspects and educational qualifications, extracurricular and re-creational activities were collected using a detailed questionnaire.

INCLUSION CRITERIA

- i. Students who had spent more than six months in the college were included in this study.
- ii. or psychological disorders.
- iii. Students neither diagnosed nor treated for any psychiatric or psychological disorders.
- iv. Students without any physical illness at the time of survey.

EXCLUSION CRITERIA

- i. Students who had spent less than six months in college were excluded from this study.
- ii. Students who reported presence of a physical illness at the time of survey.

This cross-sectional study was done among a total of 120 subjects, based on inclusion and exclusion criteria's who were medical students of the different departments of Basaveshwara Medical College and Hospital which is located in the chitradurga city of Karnataka. Strict confidentiality of the subjects as well as their data were maintained. To access and evaluate the prevalence of depression as well as its various degrees the 'Hamilton Depression Rating Scale (HAM-D)' was used.

The Hamilton Depression Rating Scale (HAM-D) has proven useful for many years as a way of determining a patient's level of depression before, during, and after treatment. It should be administered by a clinician experienced in working with psychiatric patients. Although the HAM-D form lists 21 items, the scoring is based on the first 17. It generally takes 15- 20 minutes to complete the interview and score the results. Eight items are scored on a 5-point scale, ranging from 0 = not present to 4 = severe. Nine are scored from 0-2 (Hedlug et al, 1979). A good rapport was established between the investigator and respondent. The instructions of each part of the questionnaires were adequately explained and care was taken to ensure that they understood the questionnaire. Each participant was requested to respond to each item in the questionnaire freely and frankly without any hesitation. Each participant was asked to clarify for understanding before they attempted to respond.

HAM-D scoring instructions

Sum the scores from the first 17 items.

0-7 =Normal.

8-13 = Mild Depression.

14-18 = Moderate Depression.

19-22 = Severe Depression.

≥ 23 = Very Severe Depression.

PROCEDURE

The data collected through the questionnaire was analyzed. The grading of depression was done according to the scale as normal (0-7), mild depression (8-13), moderate depression (14-18), severe depression (19-22) and very severe depression (more than or equal to 23).

STATISTICAL ANALYSIS:

The data which was collected was then entered into Microsoft excel. The collected data was analyzed using SPSS (Statistical package for social science) software version 20. Categorical variable will be presented as frequencies and percentages. Chi-square test was used to determine the statistical significance of the prevalence of COVID-19 infection, post-vaccination with them doing their duties in pandemic. Independent sample T-square test/ANNOVA will be used as a test of significance for quantitative variables. The probability of less than 0.05('p' value less than 0.05) was considered statistically significant.

RESULT

Out of 120 medical students 44 subjects were found to have depression and the rest 76 students were normal as depression was not found in them. So, the prevalence of the subjects suffering from depression out of the total 120 subjects is found to be 37% and the prevalence of the normal subjects having no depression is found to be 63%. Now, categorically

according to the degree of depression, 19 subjects out of 120 subjects were found to be suffering from mild depression, so the prevalence of mild depression out of the total number of subjects is 16%. Similarly, the prevalence of moderate depression is 14% (17 moderately depressed subjects among 120 subjects), the prevalence of severe depression is 7% (8 severely depressed subjects among 120 subjects) and lastly the prevalence of very severe depression among the Basaveshwara Medical College is 0% (not even a single severely depressed subject was found among the studied subjects) (see Table-1 and Fig-1).

Table-1: This table shows the prevalence of depression among the students in Basaveshwara Medical College and Hospital.

S. No.	Degree of depression	No. of subjects out of 120 subjects	Percentage (%) of prevalence
1.	No depression	76	63%
2.	Mild depression	19	16%
3.	Moderate depression	17	14%
4.	Severe depression	8	7%
5.	Very severe depression	0	0%

Fig-1: This figure shows the prevalence of depression among medical students in Basaveshwara Medical College and Hospital.

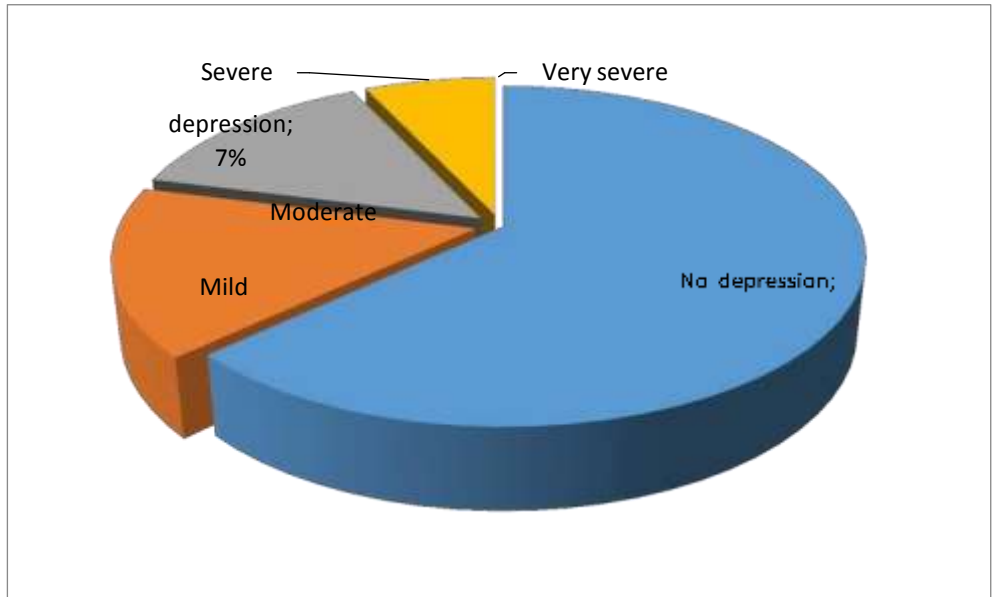


Table-2: This table shows the prevalence of degree of depression among medical students who are suffering from depression in Basaveshwara Medical College and Hospital.

S. No	Degree of depression	No. of subjects out of 44 subjects suffering from depression	Percentage (%) of prevalence
1.	Mild depression	19	43%
2.	Moderate depression	17	39%
3.	Severe depression	8	18%
4.	Very severe depression	0	0%

Mild depression 43%

Moderate depression 39%

Severe depression 18%

Very severe depression; 0%

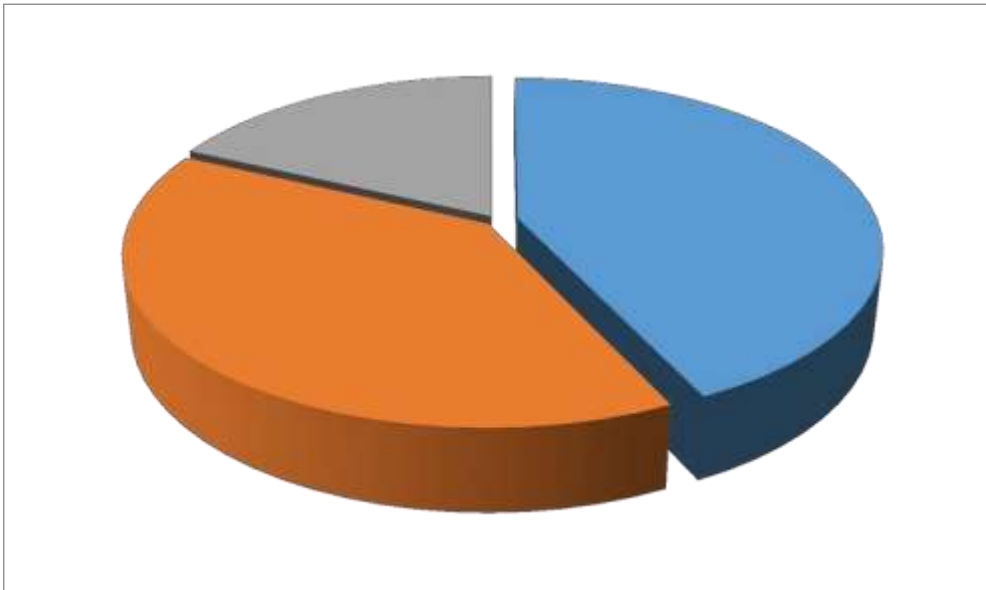


Fig-2: This figure shows the prevalence of degree of depression medical students who are suffering from depression in Basaveshwara Medical College and Hospital.

DISCUSSION

Depression and anxiety levels in the community are considered as specific indicators for mental status of a person. Various studies have documented stress among medical students (John A ET AL, 1997). Depression and anxiety are commonest mental illnesses especially in adolescents. Among medical students, academic stressors include the volume of material to be learned, academic performance and evaluation (examination and continuous assessment). Academically less successful students reported somewhat higher levels of depressive ideation and symptomatology (Stewart SM et al, 1995). The potential negative effects of emotional distress on medical students include impairment of functioning in classroom performance and clinical practice, stress-induced disorders and deteriorating performance (Malathi A et al, 1999), (Bramness JA et al, 1991 Among them 53 students filled up the form properly and sent it back within a given time. So, the response rate in their survey was 53%. In their study also the severity of depression was assessed by Hamilton Rating Scale for Depression and they found that 39.6% of the respondents had mild depression. Out of which 80.9% had mild depression and 19.1% had moderate depression. None had severe or very severe depression (see figure 3). In this current study, 37% of the studied population had depression, which is slightly lower as compared to the study done by Zaman S et al and much lower to a similar study done by Yousuf A et al in 2011 but the depression is about three times more frequent as compared to another study done in the United States by Katz ED et al in 2006.

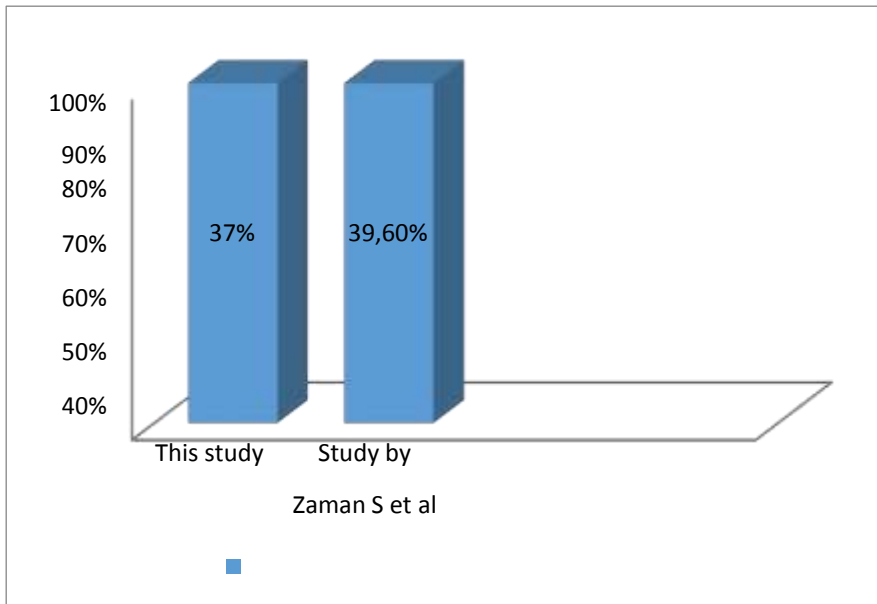


Fig-3: This figure shows the percentage of prevalence of depression in our study along with the one done by Zaman S et al in 2014. In both of these studies Hamilton Depression Rating Scale was used to assess the prevalence of depression.

Medical students constitute a vulnerable group that has a high prevalence of psychiatric morbidity comprising of anxiety and depression. Amongst medical students, stress has been reported to be due to academic demands, exams, inability to cope, helplessness, increased psychological pressure, mental tension and too much work load (Shaikh BT et al, 2004). Several studies have reported high rates of psychological morbidity amongst medical students using various instruments (Dahlin ME et al, 2007), (Guthrie E et al, 1998). Previous studies in Pakistan have shown a higher prevalence of anxiety and depression in medical students (Khan MS et al, 2006), (Inam SNB et al, 2003). Such findings are most likely related to academic, financial and social demands that college environments place on students at a time when they are also involved in issues related to life style and careers. Retrieving knowledge about psychiatric morbidity is important as it can help in implementing preventive mental health programmers.

Women were found to have a significantly higher rate of probable major depression compared with men for both students and residents ($P < 0.001$) in a multi-institutional study by Goebert D et al in 2009. Western data suggest that females experience high levels of stress as compared to males (Ali BS et al, 1998). Several studies have reported significant distress among medical students (Clark DC et al, 1988), (Lloyd C et al, 1984), (Vitaliomo PP et al, 1988). On the other hand, some studies have found little or no evidence of stress among medical students (All Bet al, 1998). However, some studies consider parental (Fadem B et al, 1995) and social support (Rospenda et al, 1994) as a definitive variable, which may influence the academic performance and mental status of medical students. An Indian study had identified academic sources as important causes of perceived stress in undergraduate medical students and hence major category of concern (Supe AN et al, 1998). A Boston study on first- and second-year medical students reported lowest family income as a important contributor to depression (13.9%) and high trait.

Depression is well known to initiate a thought of worthlessness/ hopelessness/ helplessness and can promote suicidal ideation. A recently conducted Chinese study reported 7.5% suicidal ideation among medical students. This figure can go high up to 30% in depressed students (Sobowale K et al, 2014). Studies have also reported suicidal ideation among medical students. A nation-wide prospective study from Norway (Tyssen R et al, 2001) revealed prevalence of suicidal thoughts in 14%. The life time prevalence was

43%, 8% had planned suicide and 1.4% attempted suicide. Depression was more common among married, male trainees in a study on prevalence of depression among post-graduate medical trainees (Zaman S et al, 2014). A medical student has to read many hours a day routinely to understand vast field of health care. Family and society have very high expectations from them. The study lends weight to our belief that the medical students have considerable amount of perceived stress or mental pressure. The stress levels likely to be higher during exam periods as (Saipanish R et al, 2003) reported in several studies. Even though many students felt the need for counselling sometime in last year none of them sought any professional help. Similar lack of use of mental health counselling services are also reported from (Givens JL et al,

2002) developed countries. Patients with major depression also often display neurocognition deficits consisting with frontal lobe dysfunction, though the deficits are generally not as severe as those seen in schizophrenia (Rogers MA et al, 2004).

Mental health of medical students has attracted attention of researchers since last few decades. This is because medical students reported higher level of anxiety and depression compared to general population and peers of same age groups (Dyrbye LN et al, 2006).

Medical students from private medical college exhibit more depression than those attending public medical schools (Saravanan C et al, 2014). A study in U.S. medical students estimated approximately 10% prevalence of suicidal ideation during medical program (Dyrbye LN et al, 2008). Students in extreme stress or depression need serious attention (Vaz RF et al, 1998), otherwise inability to cope successfully with the enormous stress of education may lead to a cascade of consequences at both personal and professional levels (John A et al, 1997). Anxiety and depression has a very high cost to individual and society, including medical school dropout (Clark DC et al, 1988), (Zoccolillo M et al, 1988), suicide (Pepitone A et al, 1981) degeneration of relationship (Clark El et al,

1986), marital problems and impaired ability to work effectively (Valko R et al, 1975).

CONCLUSION

This study has shown that the prevalence of depression among the medical students is 37% (mild depression is 16%, moderate depression is 14%, severe depression is 7% and lastly very severe depression is 0%) in Basaveshwara Medical College and Hospital. Thus, this study shows that the medical students in a medical institute are suffering from psychological distress which is leading them into depression.

The limitations of this study were small sample size, conductance at single institute and also study results were based on questionnaires pattern so chances of reporting bias can present as students may be reluctant to expose depressive thoughts or suicidal ideations. In addition, limitations of the study also include lack of baseline information concerning 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 compare our findings with the general population. So, the findings can't be generalized. In future, larger, multi-centric studies are needed to find the sources of stress, stressors variation with different factors and associated psychological disturbances in medical students.

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