# Depression among Medical Students and its Association with Gender, Housing and Year of Study

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## ABSTRACT

**Aim:** To assess prevalence of depression and its association with gender, housing and year of study among medical students of a public sector medical college in Lahore, Punjab, Pakistan.
**Study design:** Cross-sectional study
**Place and duration of study:** Shaikh Khalifa Bin Zayed Al-Nahyan Medical and Dental College Lahore in the month of June 2017.
**Method:** Three hundred seventy undergraduate medical students present in the college at the time of survey participated. A questionnaire was administered which contained demographic questions, Zung Self Rating Depression Scale (ZSDS) and Random Factors which are considered to be the cause of depression.
**Results**: One hundred and forty seven (40%) were found to be depressed with 112(30%) mildly depressed, 23(6%) moderately depressed and 12 (4%) severely depressed. Female Medical students were found to be more depressed as compared to male students ($\chi^2$=14, df=3, p=0.003). Students who lived in hostels were comparatively more depressed than Day scholars ($\chi^2$=7.7, df=3, p=0.05). But there was no correlation between year of study and depression with a p-value >0.05 ($\chi^2$ =12, df=12, p=0.3).
**Conclusion:** Depression is common among medical students with higher percentages in female medical students than males and the students living in hostels away from their families than day scholars.
**Keywords:** Depression, Medical education, Medical students

## INTRODUCTION

Depression is an illness that involves the human body, mood, thoughts and behavior. It affects the way a person eats, sleeps, thinks and feels about different things.[1] Patients constantly suffer and there are recurrent bouts. There is a high economic cost for this problem, however the cost of human suffering cannot be estimated.[2] Mentally stable and healthy medical students are likely to become healthy practitioners in future and promote better health and form better relations with the patients. There is a decrease in functionality of medical students due to depression which disturb the relationships among the medical students and between physicians and patients. Depression and severe stress may lead to substance abuse, broken relationships, suicide and hate for the profession. Professional life is also affected because of distress contributing to cynicism which subsequently affects students' care for the patients, relationship with faculty and finally the culture of medical profession[3]. A meta-analysis of 77 studies revealed a high prevalence of depression (28%) among medical students[4].There is increased prevalence of depression among medical students as compared to the group of peers of equal age in general population[5] and non-medical students[6].

In Pakistan the study of depression among medical students is scanty. In the western world a lot of research has been done on this issue. Depression can interfere with the functioning of a person and can make life miserable. Environment of a medical school is very toxic and students are more prone to severe depression because of

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academic, psychological and existential stressors. Female students are more susceptible to depression and there is high prevalence of depression in female medical students as compared to male students[7]. University life during undergraduate medical training requires full-time commitment and responsibility to academics and skill learning. Long studying or working hours, environment not suited to learning, sleep deprivation and factors interfering their personal life are common during this period.[8] Poor mental health in medical students is a predictor of di stress, later in the physician[9,10]. Students with higher depression endorse the opinion that a stigma is associated with depression as compared to their non-depressed colleagues.[7]

## MATERIALS AND METHODS

A total of 370 medical students from Shaikh Khalifa Bin Zayed Medical & Dental College affiliated with University of Health Sciences Lahore, Pakistan present at the time of survey participated in the survey voluntarily. The subjects included both male and females with no age restrictions. Inclusion criteria were all the undergraduate medical students and house officers/ Residents were excluded. A Questionnaire comprising of (a) 4-item socio-demographic Questionnaire to access the age, sex, year of study and housing (b) 16 common stressors to access their frequency and (c) Zung Self-Rating Depression Scale (ZSDS) for screening of depression, was administered to the students. A consent form which explained the purpose of study and assured the anonymity was also attached to the Questionnaire. Students were given enough time to answer the questionnaire. Zung Self-Rating Depression Scale (ZSDS) has long been used for screening of depression and

has been tested and verified.[11] It can be administered to younger adults above the age of 13 years.[12] ZSDS comprises 20 items and response to the 20 items are made on a 4-ponit scale, ranging from 1 to 4 (total scores can range from 20 to 80). Data collected was entered and analyzed by using IBM SPSS statistics 20.

## RESULTS

The age of the students ranges from 17 years old to 25 years old with a mean age of 23.05 ± S. D= 3.19. Out of 370 students, 229 (61.9%) students lie in the age group 17-19 years old, 61 (16.5%) students lie in the age group 20-22 years old and 80 (21.6%) students lie in the age group 23-25 years old.202 (54.6%) students were male and 168 (45.4%) students were female. Out of 370 students, 147 students had ZSDS score above the threshold for depression i.e. scores above 44. Study revealed that out of 370 students 28.9% (n=107) were mildly depressed, 4.3% (n=16) moderately depressed and 2.4% (n=9) severely depressed. Female Medical students were found to be more depressed as compared to male students (χ2=14, df=3, p=0.003). Students who lived in hostels were comparatively more depressed than Day scholars (χ2=7.7, df=3, p=0.05). But there was no correlation between year of study and depression with a p-value >0.05 (χ2=12, df=12, p=0.3). The sample distribution of ZSDS score according to gender, housing and year of study are shown in Table (1)

**Table 1:** Sample distribution of ZSDS score: Depression symptoms (n=370)

| Variable | Total | Normal | Mild | Moderate | Severe |
|---|---|---|---|---|---|
| Total | 370 | 223 (60.27%) | 122 (30.27%) | 23 (6.22%) | 12 (3.24%) |
| Age (yrs) | 23.05±3.19 | | | | |
| **Gender** | | | | | |
| Male | 186 (50.27%) | 129 (57.85%) | 46 (41.07%) | 8 (34.78%) | 3 (25%) |
| Female | 184 (49.73%) | 94 (42.15%) | 66 (58.93%) | 15 (65.22%) | 9 (75%) |
| **Housing** | | | | | |
| Hostel life | 205 (55.41%) | 128 (57.40%) | 52 (46.43%) | 16 (69.57%) | 9 (75%) |
| Day Scholar | 165 (44.59%) | 95 (42.60%) | 60 (53.57%) | 7 (30.43%) | 3 (25%) |
| **Year of Study** | | | | | |
| 1st Year | 93 (25.14%) | 53 (23.77%) | 34 (30.36%) | 5 (21.74%) | 1 (8.33%) |
| 2nd Year | 83 (22.43%) | 50( 22.42%) | 23 (20.54%) | 8 (34.78%) | 2 (16.6%) |
| 3rd Year | 73 (19.73%) | 44 (19.73%) | 25 (22.32%) | 3 (13.04%) | 1 (8.33%) |
| 4th Year | 70 (18.92%) | 45 (20.18%) | 17 (15.18%) | 3 (13.04%) | 5 (41.67%) |
| Final Year | 51 (13.78%) | 31 (13.90%) | 13 (11.61%) | 4(17.39%) | 3(25%) |

It can be seen that more male students (n=5) suffer from severe depression than female students (n=4) but more female students (n=55) suffer from mild depression than males (n=52) [Fig. 1]. It can be seen that 4th year students have the highest frequency of severe depression (n=4) compared to the other classes (Fig. 2). It can be seen that day scholars have a higher frequency of severe depression (5) than hostel life (4) but more hostel life (9) have moderate depression than day scholars(7). Results show a strong association of female gender and residency

in hostel with depression. We didn't find any correlation of depression when years of medical college were considered.
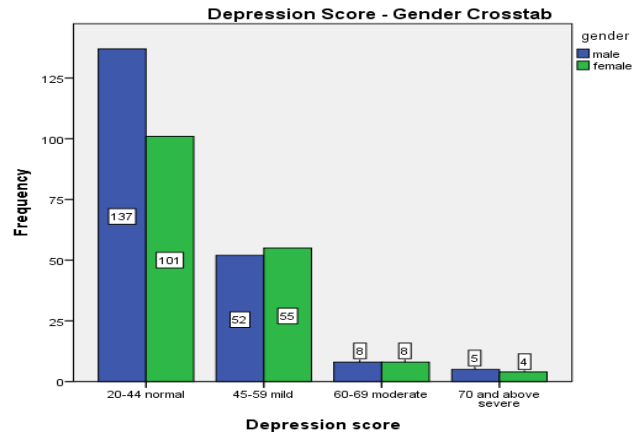
Fig. 1: Crosstab between the depression score and gender

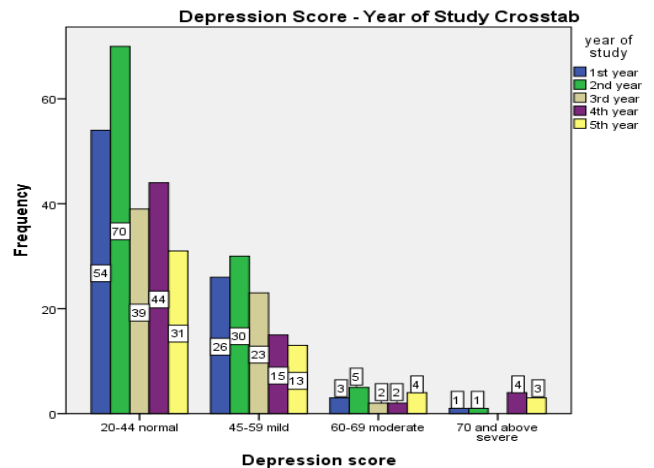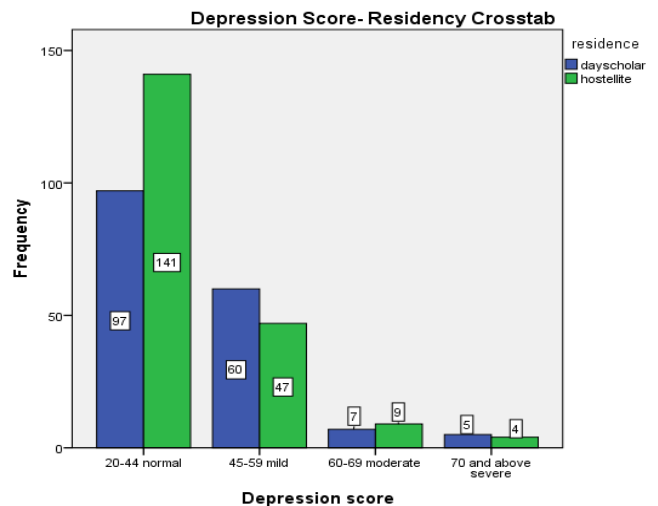

Fig. 2: Depression score and the year of study



Fig. 3: Depression score and residence

## DISCUSSION

With the increase in number of medical students each year, there is nerve breaking competition which leads to mental disorders like depression among the students. There is a little research done on this topic in Pakistan and there are few studies using ZungSelf-rating Depression Scale to assess depression among medical students in Pakistan. A study done to access the depression among medical students of a public medical college Karachi, Pakistan revealed a high prevalence (70%) of anxiety and depression.[13] A study conducted to access depression and anxiety among females medical students only, showed high prevalence of depression (19.5%) among them with high ratio of those living in hostels.[14]

Across-sectional study was conducted at a medical school in main land China in 2012 which showed high prevalence of depression among Chinese medical students.[15] Depression is comparatively high among the medical students of eastern countries as compared to students of the western world. A special study conducted at Shiraz University of Medical Sciences, Iran and Dusseldorf University, Germany revealed a high prevalence of depression among medical students of Iran than in the German Students.[16] A research done in a Medical college of New Delhi, India revealed high depression in the medical students of India.[17] A highly significant finding of our research was a gender difference regarding the association with depression according to which female students reported a significantly higher prevalence of depression than male students. This gender variation of the depression in medical students could be a reflection of trend of higher prevalence of depression in females in the general population.[18]

There is no change in depression rate over the years of medical education but some studies show a change in the depression rate according to year of education but the causes are still unknown. Some longitudinal studies suggested that the depression rate is high during the first year, followed by a gradual decline during the later years of medical school.[19,20] Medical students are future doctors so they should be prevented from causes of morbidity and mortality such as depression and suicidal behavior. These problems should be dealt with great seriousness and should be eradicated as soon as possible from the students so that their quality of life does not compromise. There are many simple authentic tools available to identify those medical students who are at a greater risk of mental disorders.[21]

Despite the availability of the resources for identification as well as treatment of students in Pakistan students remain unidentified and untreated. Students with mental disorders must be identified and treated. Due to the stigma related to mental disorders majority of the students keep it secret which may lead to further damage to mental health. In addition to providing easy access to mental healthcare, ideally outside the faculty, maintaining anonymity and confidentiality, reducing the stigma related to seeking mental health treatment, the root cause of depression should be eradicated by bringing more efficient changes in the curriculum.[22]There are various methodological limitations of this cross-sectional study.

Student concerns about the confidentiality because of conductance of the survey by college students could have influenced students' responses. We used cross-sectional design of study rather than a longitudinal one which is more compelling to establish causality between the associations found. Another limitation is that the study was conducted at a single institute. Students may exaggerate or ignore their symptoms depending on their personality trait. Since the survey ensured the anonymity and confidentiality, students filled the form voluntarily which could have promoted honest responses. To overcome such limitations future studies should focus on using longitudinal design of study and arranging staff outside of the institute in order to provide more robust confidentiality to the medical students.

## CONCLUSION

Depression was higher among female medical students than males and those students who live in hostel away from their homes than day scholars. However, no association was found between depression and year of study. In order to support the well being of medical students in Pakistan more research is needed to be done in all medical institutes. This silently existing problem of medical students should be considered by authorities and must be dealt with greater care.

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