



## PREVALENCE OF DEPRESSION AND ANXIETY AMONG MEDICAL STUDENTS

<sup>1</sup>\*Dr. Mehwish Nazir, <sup>2</sup>Dr. Sara Saeed and <sup>3</sup>Dr. Sara Fatima<sup>1</sup>PMDC # 82044-P.<sup>2</sup>PMDC # 87949-P.<sup>3</sup>PMDC # 94743-P.**\*Corresponding Author:** Dr. Mehwish Nazir

PMDC # 82044-P.

Article Received on 23/08/2019

Article Revised on 13/09/2019

Article Accepted on 03/10/2019

**ABSTRACT**

**Objective:** To determine the prevalence of anxiety and depression among medical students of public and private sector medical colleges. **Study Design:** Cross sectional study. **Duration and place of study:** Medical colleges of public and private sector in Sargodha. **Methodology:** A cross sectional study was carried out in 2018. A stratified random sample method was used and 93 students were selected. A standardized questionnaire based on Hospital Anxiety and Depression Scale was distributed among medical students randomly after taking informed consent ethical approval was given by ethical review committee, PIMS SZABMU. **Results:** Mean age of sample was 21.81 ± 1.03 in a sample of 93 students. Prevalence of anxiety and depression was 22.6% and 7.5% respectively. Female showed a higher prevalence of anxiety (76%) and depression (85.7%). Levels of anxiety and depression were found to be more in public sector medical students and more in younger age than in elder. **Conclusion:** This study suggests that medical students experience anxiety and depression; however prevalence of anxiety is more. Depression and anxiety are significant hidden problems. There is need of psychiatric counseling and social services should be made available to vulnerable students.

**KEYWORDS:** Depression, anxiety, medical students, public sector, private sector.**INTRODUCTION**

The greater the psychosocial health, the better is ability to overcome stressful conditions of life.<sup>[1]</sup> Depression is highly common in a society. According to WHO by 2020 it would be the second most prevalent condition worldwide.<sup>[2]</sup> Medical studies are perceived as stressful. Frequency of depression and anxiety is high among medical students.<sup>[3-7]</sup> Mental health among university students account as significant and escalating health problem for which epidemiological research should be priority.<sup>[8]</sup> Medical education is among the most challenging and stressful one. As future physicians, medical students will have tremendous impact on way of living and behavior of the community. They will play important role in preventing diseases and provide basic health services to the community.<sup>[9]</sup> There is substantial evidence that proportions of suicide and depression are very common among medical students and remain high when they become physicians.<sup>[10]</sup> Several studies have reported of psychological morbidity among medical students of various ages using different instrument.<sup>[11-12]</sup> Studies conducted worldwide as well as in Pakistan reported high prevalence of depression and anxiety among medical students.<sup>[13-19]</sup> No such studies have been conducted in Sargodha, objective of our study is to

determine the prevalence of depression and anxiety of medical students of public and private sector.

**METHODOLOGY**

A cross sectional study was carried out at different medical colleges of public and private sector in Sargodha, in 2018. The study was reviewed and approved by ethical committee of PIMS, Islamabad. The questionnaire was administered to 93 medical students from first year to final year and these students had no self-reported physical illness. The sample size was calculated by using WHO calculator for sample size. The minimum calculated sample size to achieve a precision of ± 10% with a 95% confidence level and confidence interval (C.I.) of 6.29 was 93. Students participated voluntarily in the study and informed consent was signed from them after explaining them the aims and objectives of the study. Prevalence of anxiety and depression was assessed using a structured validated questionnaire, Standardized Hospital Anxiety & Depression Scale. HAD scoring is done for each anxiety and depression as follow

0-7 = Normal

8-10 = Borderline (borderline case)

11-21 = Abnormal (case).

Data analysis was done using SPSS 23.

**RESULT**

Total sample size is 93 of medical students from 18-25 years of age and mean age calculated as 21.81 +- 1.03 years. The majority of the students are female (69.9%) and are studying in public sector (57%). Concerning the age of medical students most of them belong to 20-22 years age group (73%). Demographic characteristics of study group are presented in table-1 gives the frequency of students in different groups with respect to age, gender, private & public sector, boarding and non-boarding.

**Table 1:**

<b>Variables</b>	<b>N</b>	<b>%</b>
<b>Age</b>		
<20	2	2
20-22	68	73.1
>22	23	24.8
<b>Gender</b>		
Male	28	30.1
Female	65	69.9
<b>Med School</b>		
Public	53	57
Private	40	43
<b>Boarding-Non Boarding</b>		
Boarding	43	46.2
Non-Boarding	50	53.8

**Table 2.1: Age \* Depression Score Cross tabulation.**

		Depression Score			<b>Total</b>
		<b>0-7</b>	<b>8-10</b>	<b>11-21</b>	
<b>Age</b>	19	1	0	1	2
20	5	2	2		9
21	14	3	2		19
22	32	7	1		40
23	15	5	1		21
24	0	2	0		2
<b>Total</b>	<b>67</b>	<b>19</b>	<b>7</b>		<b>93</b>

**Table 2.2 Gender \* Depression Score Cross tabulation.**

		Depression Score			<b>Total</b>
		<b>0-7</b>	<b>8-10</b>	<b>11-21</b>	
<b>Gender</b>	male	19	8	1	28
	Female	48	11	6	65
<b>Total</b>		<b>67</b>	<b>19</b>	<b>7</b>	<b>93</b>

**Table 2.3 Med School \* Depression Score Cross tabulation.**

		Depression Score			<b>Total</b>
		<b>normal</b>	<b>borderline</b>	<b>Case</b>	
<b>Med School</b>	public	40	11	2	53
	private	27	8	5	40
<b>Total</b>		<b>67</b>	<b>19</b>	<b>7</b>	<b>93</b>

**Table 2.4: Boarding, Non-boarding \* Depression Score Cross tabulation.**

		Depression Score			<b>Total</b>
		<b>normal</b>	<b>borderline</b>	<b>Case</b>	
<b>Boarding and non-boarding</b>	Boarding	30	10	3	43
	Non boarding	37	9	4	50
<b>Total</b>		<b>67</b>	<b>19</b>	<b>7</b>	<b>93</b>

**Table 3.1: Age \* Anxiety Score Cross tabulation.**

		Anxiety Score			<b>Total</b>
		<b>Normal</b>	<b>borderline</b>	<b>Case</b>	
<b>Age</b>	19	1	1	0	2
	20	3	3	3	9
	21	5	9	5	19
	22	22	11	7	40

	23	10	5	6	21
	24	2	0	0	2
Total	43	29	21	93	

**Table 3.2 Gender \* Anxiety Score Cross tabulation.**

Gender	Anxiety Score			Total
	Normal	borderline	case	
Male	19	4	5	28
female	24	25	16	65
Total	43	29	21	93

**Table 3.3 Med School \* Anxiety Score Cross tabulation.**

Med School	Anxiety Score			Total
	normal	borderline	case	
public	26	15	12	53
private	17	14	9	40
Total	43	29	21	93

**Table 3.4 Boarding, Non-boarding\*Anxiety Score Cross tabulation.**

Boarding, Non-boarding	Anxiety Score			Total
	normal	borderline	Case	
Boarding	20	10	13	43
Non boarding	23	19	8	50
Total	43	29	21	93

## DISCUSSION

Medical students have to memorize tons of information in relatively short period of time. This overloaded information and inability to handle all the information at once during examination period create the feelings of disappointment. In addition to tackle this information other factors that contribute are sleep deprivation, inordinate hours, excessive workload, overbearing clerical and administrative responsibilities, inadequate support from allied health professionals, too many difficult patients, stressful situations, like the delivery of bad news.<sup>[21-23]</sup> These factors ends in anxiety disorder, sleeping disorder, decreased attention, reduced concentration, temptation to cheat on exams, depression, loss of objectivity, increased incidence of errors, and improper behavior such as negligence.<sup>[21,24]</sup>

The present study illustrated presence of high prevalence rates of anxiety & depression. The rates were 31.2% & 22.6% for borderline & morbid anxiety, respectively. While the corresponding rates for depression were 20.4% & 7.5%, respectively. It is comparable to the prevalence of anxiety and depression reported in US (49%)<sup>[25]</sup> Sweden (12.9%)<sup>[26]</sup> Mumbai, India (39.9%)<sup>[27]</sup> Iran (44%)<sup>[28]</sup> Turkey (27.1)<sup>[29]</sup> Local studies depict prevalence of anxiety and depression Karachi (70%)<sup>[30]</sup> Multan (43.86)<sup>[31]</sup> Lahore (Anxiety: 43.7% Depression: 19.5%)<sup>[32]</sup> Result of our study differs significantly from previous studies, one conducted in Karachi reported prevalence rates 60% and 70% respectively. The reason for this variation might be difference in teaching methodology, attitude and behavior of medical students

and teachers, study environment, introduction of problem based learning, new examination style and revised syllabus.

Our study reports higher rates among female medical students which are supported by some studies.<sup>[33,34]</sup> And possible explanation for this is that women articulate depression symptoms more even the minor ones, they often feel helpless in such situations and blame themselves for all the wrongs they are going through. Hormonal changes also play a vital role in the development of depression among females. Estrogen depletion, known as menopausal symptoms, reports high rates of depression and vasomotor instability.<sup>[35]</sup> One study states that every woman will experience depression at least once in her lifetime.<sup>[36]</sup>

According to our study rates of anxiety are higher among boarding students as compared to non-boarding and the reason for this is problems faced in hostels, lack of immediate family support, and absence of family members & negative influence of the hostel life.

One of the limitations of our study is that no data on the psychological status of students is mentioned to compare that with normal population.

This study does not show the frequency of depression and anxiety among non-medical students hence that cannot be compared. Class of study has not been mentioned therefore, it cannot be assessed whether prevalence is high among senior students or vice versa.

## CONCLUSION

It is recommended that any psychological issue before entering medical college shall be properly reported and taken notice of. Regular follow up leads to revise the results and hence better steps can be taken accordingly for resolving depressive symptoms.

It is concluded that significant levels of depression are observed among medical students affecting their studies enormously and associated with negative impact on their clinical practice. These results show that there is a need of raising these issues. Preventive and curative measures should be taken. Students should be encouraged to seek help. Medical schools should proactively find out those students who require counseling and should provide them adequate services. For diagnosed cases of mental illness. There should be active participation of family, friends and medical staff.

Students should be evaluated for mental health yearly, beginning right from their admission in medical school. Students should be encouraged to maintain their social and personal lives. Interventions taken as preventive tool, addressing the major causative factors and the solution to these problems should be the part of interventions.

## REFERENCES

- Ahmed I, Banu H, Al-Fageer R, Al-Suwaidi R. Cognitive emotions: depression and anxiety in medical students and staff. *J Crit Care*, 2009; 24: e1-7.
- World Health Organization. Mental and neurological disorders. Fact sheet No., 2001; 265.
- Bayram N, Bilgel N. The prevalence and socio-demographic correlations of depression, anxiety and stress among a group of university students. *Soc Psychiatry Psychiatr Epidemiol*, 2008; 43: 667-72.
- Dahlin M, Joneborg N, Runeson B. Stress and depression among medical students: a cross-sectional study. *Med Educ*, 2005; 39: 594-604.
- Aktekin M, Karaman T, Senol YY, Erdem S, Erengin H, Akaydin M. Anxiety, depression and stressful life events among medical students: a prospective study in Antalya, Turkey. *Med Educ*, 2001; 35: 12-7.
- Azhar MZ. Psychological stress and treatment - research issues. *Med J Malaysia*, 2004; 59: 143-5.
- Firth-Cozens J. Medical student stress. *Med Educ*, 2001; 35: 6-7
- Eisenberg D, Hunt J, Speer N. Mental health in american colleges and universities: variation across student.
- J Nerv Ment Dis., 2013; 201:60-7. [PubMed]
- Mancevska S, Bozinovska L, Tecce J, Pluncevik-Gligoroska J, Sivevska-Smilevska E. Depression, anxiety and substance use in medical students in the Republic of Macedonia. *Bratisl Lek Listy*, 2008; 109: 568-72. [PubMed]
- Levine RE, Bryant SG. The depressed physician: a different kind of impairment. *Hosp Physician*, 2000; 36: 67-73
- Dahlin ME, Runeson B. Burnout and psychiatric morbidity among medical students entering clinical training: a three year prospective questionnaire and interview-based study. *BMC Med Educ*, 2007; 7: 6.
- Guthrie E, Black D, Bagalkote H, Shaw C, Campbell M, Creed F. Psychological stress and burnout in medical students: a five-year prospective longitudinal study. *J R Soc Med*, 1998; 91: 237-43.
- Dahlin M, Joneborg N, Runeson B. Stress and depression among medical students: a cross-sectional study. *Med Educ.*, 2005; 39: 594-604. [PubMed]
- Baldassari S, Alves TC, de Andrade AG, Nogueira Martins LA. The characteristics of depressive symptoms in medical students during medical education and training: a cross-sectional study. *BMC Med Educ*, 2008; 8: 60.
- Sherina MS, Rampal L, Kaneson N. Psychological stress among undergraduate medical students. *Med J Malaysia*, 2004; 59: 207-11.
- Saipanish R. Stress among medical students in a Thai medical school. *Med Teach*, 2003; 25: 502-6.
- Baykan Z, Naçar M, Cetinkaya F. Depression, anxiety, and stress among last-year students at Erciyes University Medical School. *Acad Psychiatry*, 2012; 36: 64-5.
- Dyrbye LN, Thomas MR, Huschka MM, Lawson KL, Novotny PJ, Sloan JA, Shanafelt TD. A multicenter study of burnout, depression, and quality of life in minority and nonminority US medical students. *Mayo Clin Proc*, 2006; 81: 1435-42.
- El-Gilany AH, Amr M, Hammad S. Perceived stress among male medical students in Egypt and Saudi Arabia: effect of sociodemographic factors. *Ann Saudi Med*, 2008; 28: 442-8. [PubMed]
- Yussof, M; Baba, A "Prevalence and associated factors of stress, anxiety and depression among prospective medical students." *Asian Journal of Psychiatry*, 2013; 59(2): 128-133.
- VanDulmen, S; Trompb, F "The impact of assessing simulated bad news consultations on medical students stress response and communication performance." *Science Direct*, 2007; 32(6): 943-950. doi:10.1016/j.psyneuen.2007.06.016.
- Ray, I; Joseph, D. "Stress in medical student." *JK Science*, 12(4): 163-164. Students who fail to handle these problem ultimately end up at psychiatric illness like sleep disorder.
- <http://dx.doi.org/10.1001/jamapsychiatry.2018.0643>.
- Dyrbye LN, Thomas MR, Eacker A, Harper W, Massie FS Jr, Power DV, et al. Race, ethnicity, and medical student well-being in the United States. *Arch Intern Med*, 2007; 167: 2103-9.
- Dahlin M, Joneborg N, Runeson B. Stress and depression among medical students: a cross-sectional study. *Med Educ*, 2005; 39: 594-604.

27. Supe AN. A study of stress in medical students at Seth GS Medical College. *J Postgrad Med*, 1998; 44: 1-6.
28. Assadi SM, Nakhaei MR, Najafi F, Fazel S. Mental health in three generations of Iranian medical students and doctors. A cross-sectional study. *Soc Psychiatry Psychiatr Epidemiol* 2007; 42: 57-60.
29. Bayram N, Bilgel N. The prevalence and socio-demographic correlations of depression, anxiety and stress among a group of university students. *SocPsychiatry Psychiatr Epidemiol* 2008; 43: 667-72
30. Khan MS, Mahmood S, Badshah A, Ali SU, Jamal Y. Prevalence of depression, anxiety and their associated factors among medical students in Karachi, Pakistan. *J Pak Med Assoc*. Dec 2006; 56(12): 583-586.
31. Jadoon NA, Yaqoob R, Raza A, Shehzad MA, Zeshan SC. Anxiety and depression among medical students: a cross-sectional study. *J Pak Med Assoc*. Aug 2010; 60(8): 699-702
32. Rab F, Mamdou R, Nasir S. Rates of depression and anxiety among female medical students in Pakistan. *East Mediterr Health J*. Jan-Feb 2008; 14(1): 126-133.
33. Rab F, Mamdou R, Nasir S. Rates of depression and anxiety among female medical students in Pakistan. *Eastern Mediterranean Health Journal*, 2008, 14(1): 126-133.
34. Iran J Public Health, 2013; 42(7): 726-736. Published online 2013 Jul 1.
35. [www.personalityresearch.org/paper/mule.html](http://www.personalityresearch.org/paper/mule.html).
36. [www.helpguide.org/articles/depression-in-women.htm](http://www.helpguide.org/articles/depression-in-women.htm).