

Depression, Anxiety and Stress among Medical and Non Medical Female Students of Pakistan

MISBAH SAGHIR¹, MUHAMMAD AUSAMA SALEEM², OWAIS KAREEM³, SHAISTA RIAZ⁴, MUHAMMAD KAMRAN MAJEED⁵, IRAM RAMZAN⁶

¹Research Officer of Psychology Dept. Muhammad Nawaz Sharif University of Agriculture, Multan.

²Lecturer of Applied Psychology Dept. Bahauddin Zakariya University, Vehari Campus.

³Senior Registrar of Psychiatry and Behavioural Sciences Dept. Nishtar Medical University, Multan.

⁴Lecturer of Applied Psychology Dept. Bahauddin Zakariya University, Vehari Campus

⁵Educator, at School Education Dept. Punjab, Bakhar.

⁶M. Phil Scholar of Psychology Dept. Institute of Southern Punjab, Multan.

Correspondence to: Muhammad Ausama Saleem, Email: m.ausama.saleem_vcamp@bzu.edu.pk, Cell: 0300-6326910

ABSTRACT

Objective: To find out the level of depression, anxiety and stress on the basis of education among female medical and non medical students.

Study Design: Cross sectional descriptive study.

Study place and duration: Study was conducted at Nishtar medical college, Multan and Bahauddin Zakariya University Multan from October 2020 to October 2021.

Methodology: The study was conducted on 100 medical students and 100 non medical students from two institutions of Multan. Depression and Anxiety stress scale (DASS) was used for evaluation of outcomes. SPSS version 23 was used for data analysis. T-test was applied to assess score differences of depression, anxiety and stress between medical and non medical students. Quantitative variables were presented as mean and standard deviation, whereas qualitative variables were presented as frequency and percentages. Probability value ≤ 0.05 was considered as significant.

Results: Mean age of participants was 24.2 ± 1.80 years and 14.5% were living away from their families. Mean score for depression in medical students were: 13.96 ± 7.289 and for depression in non medical students were: 16.02 ± 6.374 , for anxiety in medical students were: 17.15 ± 6.936 for anxiety in non medical students were: 14.33 ± 5.829 , for stress in medical students were: 14.61 ± 5.148 and for stress in non medical students were: 14.73 ± 6.078 . Correlation of stress with depression was significant: $r = .045$, $p < 0.05$, whereas correlation of stress with anxiety was non-significant $r = .131$, $p > 0.05$.

Conclusion: Female medical students had low level of depression but high level of anxiety and stress as compared to non medical students. Presence of stress was correlated with presence of depression among medical and non medical students.

Keywords: Depression, Anxiety, stress, Medical students, Non medical students, Pakistan

INTRODUCTION

Depression is a state of mood characterized by feeling of disconsolateness, inadequacy and persistent emotional condition that altered perception and personal life of an individual^{1,2}. On other hand anxiety is a feeling of persistent discomfort, unease, fearful concern, apprehension followed by somatic and autonomic manifestations³. Sometimes anxiety is a normal, reasonable, emotional state having potential of alerting individual for danger⁴. In case of prolonged symptoms of anxiety and severe irrational and disproportionate that interrupt the routine activities are called anxiety disorder⁵. Whereas stress is a combination of psychological and physiological phenomenon which include stressor, perception of a person towards stressor, contextual and conditioning stimuli, number of residual stimuli and expression of stressor response^{6,7}.

These disorders are primarily disorders of emotion⁸. In certain situations like loss and disappointment or in state of achievement or success a student may exhibit stress which may result in anxiety and depression later in life⁹. Many studies have been conducted to determine the source of stress in medical and non medical education. Majority of published literature reported time management, academic demands, peer pressure, financial issues and making importance career choices on top of list¹⁰. In different countries as in Malaysia, British and Thailand observed frequencies of depression, anxiety and stress were 41.9%¹¹, 31.2%¹² and 61.4%¹³ respectively. Stress, anxiety or depression has delirious effect of student's educational progress. Moreover managing depression, anxiety or stress in students life need individualized assessments, interventions and rehabilitations taken for each condition. In fact females report higher level of depression, anxiety and stress than males however the prevalence and relationship of these conditions among female medical and non medical students are needed to be updated properly so that institutional strategies would be devised to help cope students with these conditions.

METHODOLOGY

Study was conducted on 200 subjects 100 medical students and 100 non-medical students. Study was completed at Nishtar medical college, Multan and Bahauddin Zakariya University, Multan, from October 2020 to October 2021 in one year duration. Ethical approval was obtained from ethical board of Nishtar hospital and department of academic affairs Bahauddin Zakariya University, Multan. Written informed consent was obtained from all participants. Simple random sampling technique was used. After obtaining demographic detail participants were questioned according to the manual for Depression and Anxiety Stress Scale (DASS).

SPSS version 23 was used for data analysis. Frequency and percentages were calculated for categorical data i.e: age, medical, non-medical education, anxiety, stress and depression. Mean and standard deviation was calculated for numerical data like depression, anxiety and stress score. T-test was applied and correlation coefficient was calculated. P value less than or equal to 0.05 was taken as significant.

RESULTS

In the current study the analysis was done on the sample of 200 medical and non medical students. Mean age of participating subjects was 24.2 ± 1.80 years and 14.5% of students were living away from their families (Table-1). Mean depression score in medical students was 13.96 ± 7.289 and in non medical students it was 14.33 ± 5.829 . Mean anxiety score in medical students was 16.02 ± 6.374 and in non medical students it was 14.61 ± 5.148 . Mean stress score in medical students was 17.15 ± 6.936 and in non medical students was 14.73 ± 6.078 (Table-2). Correlation of stress with depression was significant: $r = .045$, $p < 0.05$, whereas correlation of stress with anxiety was non-significant $r = .131$, $p > 0.05$ (Table-3).

Female Medical students have low level of depression as compare to non medical students. However female medical

students have high level of anxiety and stress than non medical students. Results also revealed that stress was related with depression but not with anxiety among medical and non medical students of both institutions.

Table-1: Demographic composition of sample of study regarding age and education (n=200)

Total sample N=200		
Characteristics	N	Weighted.%
Age	200	24.2±1.80 years
Living far from family		
Yes	29	14.5%
No	171	85.5%
Education		
Medical	100	50%
Non Medical	100	50%

Table-2: Mean, Standard Deviation, and t-values of Education Subscales on DASS (DASS; n=200)

Scale	Medical (n=100)		Non Medical (n=100)		T	P	95% LL	CI UL
	Mean	SD	Mean	SD				
Dass								
Depression	13.96	7.289	14.33	5.829	-.396	.692	-2.211	1.471
Anxiety	16.02	6.374	14.61	5.148	1.721	.087	-.206	3.026
Stress	17.15	6.936	14.73	6.078	2.625	.009	.601	4.239

Table-3: Correlation matrix among Depression, anxiety and stress among medical and non medical students (n=200)

Dass	Anxiety P-Value	Depression P-Value	Stress P-Value
Anxiety	1	.122	.131
Depression		1	.045
Dtress			1

DISCUSSION

The present study was intended to find the level of depression, anxiety and stress among medical and non medical students. In our study 1st of all we hypothesized that ratio of depression in non medical students is higher when compared medical students. The findings of this study were not supported with predicted hypothesis. Another study finding found identical conclusion that evaluate the frequency of anxiety and depression among humanities and medical students and found similar symptoms of depression. In a study Bennett et al reported that severity of symptoms of depression in humanities is negatively related to emotional stability and positively related to stress vulnerability¹⁴.

The second hypothesis of the study was that Anxiety is higher in medical students than non medical students. The findings of the study supported the hypothesis among medical students. Another research also support the hypothesis. A high prevalence of anxiety was found amongst medical students. Female students have high anxiety than male students. In 2010 Jadoon al¹¹ conducted a study and reported that medical students are more prone to anxiety and stress stimulus as compared to non medical students.

The Third hypothesis of the study was that Stress is higher in medical students than non medical. The findings of the study supported the hypothesis. Another Pakistani research 'To determine incidence of stress and factors controlling stress in medical students at various stages of MBBS course. Among medical students stress is process oriented and more common in students of 2nd and 3rd professional year. A study was conducted by Fuad et al in 1998 and reported that at Seth GS medical collage academic factors are common that medical students perceived. Second most cause is emotional stress that was observed in 1st year students^{15, 16}.

Morse and Dravo¹⁷ conducted a study on dental students and concluded that academic timing and is the main factor of stress in medical collages. Private medical collages are more

prone to stress stimuli because of different economical status. Similarly Muirhead and Locker¹⁸ reported that high tuition is the main contributing factor of stress.

Vasconcelos et al¹⁹ conducted a study on 234 medical students and used Hospital Anxiety and Depression Scale (HADS) and observed anxiety and depression symptoms in 5.6% of medical students. In Australian population this ratio was 7.9% of university students²⁰.

CONCLUSION

The result clearly revealed that female Medical students have low level of depression but high level of anxiety and stress as compared to the non medical students. Therefore our results supported the first hypothesis that medical students have low level of depression than non medical students whereas it rejects the 2nd hypothesis that medical students have high level of anxiety than non medical students and it also rejects the 3rd hypothesis that medical students have high level of stress. The results also revealed that stress in students are significantly related with depression but not with anxiety. Therefore the investigated conditions i.e: depression, anxiety and stress may be recognized as separate entities with multiple precipitants rather than the continuum of emotional disturbances and individualized trained staff may be allocated to help students with these conditions.

Limitations: The research work was conducted at two institutions in a single city. Owing to the different socio-economical background of students the sample may represent some heterogeneity.

Suggestions: Following are some suggestion to improve the further research.

The sample size should be taken from more than one city and from multiple institutions so that the results would be more generalizable.

Other methods may be used to control socio-economical variables of students.

Regression analysis may be used to establish significant correlations between outcomes among medical and non medical students.

REFERENCES

- Mutalik N, Moni S, Choudhari S, Bhogale G. Depression, Anxiety, Stress among College Students in Bagalkot: A College Based Study, International Journal of Indian Psychology. 2017;8(7):748-51.
- Ghasemi M, Lotfollahzadeh H, Kermani-Ranjbar T, Kharazifard M.J. Effect of Music Practice on Anxiety and Depression of Iranian Dental Students. J Dent (Tehran). 2017;14(3):138-143. PMID: 29167685.
- Saravanan C, Mahmoud I, Elshami W, Taha MH. Knowledge, Anxiety, Fear, and Psychological Distress About COVID-19 Among University Students in the United Arab Emirates. Front Psychiatry. 2020 Oct 22;11:582189. doi: 10.3389/fpsy.2020.582189.
- Xiang YT, Yang Y, Li W, Zhang L, Zhang Q, Cheung T et al. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. Lancet Psychiatry. 2020;7(3):228-229. doi: 10.1016/S2215-0366(20)30046-8.
- Leppink EW, Lust K, Grant JE. Depression in university students: associations with impulse control disorders. Int J Psychiatry Clin Pract. 2016;20(3):146-50. https://doi.org/10.1080/13651501.2016.1197272.
- Sarkar S, Gupta R, Menon V. A systematic review of depression, anxiety, and stress among medical students in India. J Mental Health Hum Behav 2017;22:88-96. Available from: https://www.jmhbb.org/text.asp?2017/22/2/88/229100.
- Seki T, Hamazaki K, Natori T, Inadera H. Relationship between internet addiction and depression among Japanese university students. J Affect Disord. 2019 Sep 1;256:668-672. doi: 10.1016/j.jad.2019.06.055.
- Rehmani N, Khan QA, Fatima SS. Stress, Anxiety and Depression in students of a private medical school in Karachi, Pakistan. Pak J Med Sci. 2018 May-Jun;34(3):696-701. doi: 10.12669/pjms.343.14664.
- Sandal RK, Goel NK, Sharma MK, Bakshi RK, Singh N, Kumar D. Prevalence of Depression, Anxiety and Stress among school going adolescent in Chandigarh. J Family Med Prim Care. 2017 Apr-Jun;6(2):405-410. doi: 10.4103/2249-4863.219988.

10. Salk RH, Hyde JS, Abramson LY. Gender differences in depression in representative national samples: meta-analyses of diagnoses and symptoms. *Psychol Bull.* 2017;143(8):783-822. <https://doi.org/10.1037/bul0000102>
11. Jadoon NA, Yaqoob R, Raza A, Shehzad MA, Zeshan SC. Anxiety and depression among medical students: a cross-sectional study. *J Pak Med Assoc.* 2010;60(8):699-702. PMID: 20726214.
12. Saipanish R. Stress among medical students in a Thai medical school. *Med Teach.* 2003;25(5):502-506. doi:10.1080/0142159031000136716.
13. Sherina MS, Rampal L, Kaneson N. Psychological stress among undergraduate medical students. *Med J Malaysia.* 2004;59(2):207-11. PMID: 15559171.
14. Bennett DS. Depression among children with chronic medical problems: a meta-analysis. *J Pediatr Psychol.* 1994 Apr;19(2):149-69. doi: 10.1093/jpepsy/19.2.149.
15. Fuad A, Rahim A, Yaacob M. Prevalence and Sources of Stress among University Medical Students: A Five-year Prospective Longitudinal Study. *Journal of Social Psychology;* 1998;91(5):237-43.
16. Yusoff MS, Abdul Rahim AF, Yaacob MJ. Prevalence and Sources of Stress among UniversitiSains Malaysia Medical Students. *Malays J Med Sci.* 2010;17(1):30-7. PMID: 22135523.
17. Morse Z, Dravo U. Stress levels of dental students at the Fiji School of Medicine. *Eur J Dent Educ.* 2007;11(2):99-103. doi: 10.1111/j.1600-0579.2007.00435.x.
18. Muirhead V, Locker D. Canadian dental students' perceptions of stress and social support. *Eur J Dent Educ.* 2008 Aug;12(3):144-8. doi: 10.1111/j.1600-0579.2008.00512.x.
19. Vasconcelos TC, Dias BRT, Andrade LR, Melo GF, Barbosa L, Souza E. Prevalência de sintomas de ansiedade e depressãoemestudantes de medicina. *Rev Bras Educ Med.* 2015;39(1):135-42. <https://doi.org/10.1590/1981-52712015v39n1e00042014>
20. Farrer LM, Gulliver A, Bennett K, Fassnacht DB, Griffiths KM. Demographic and psychosocial predictors of major depression and generalised anxiety disorder in Australian university students. *BMC Psychiatry.* 2016;16(1):241. <https://doi.org/10.1186/s12888-016-0961-z>