

## ORIGINAL ARTICLE

# Frequency of Depression, Anxiety and Stress among medical students of Rawalpindi and Islamabad

HAFSAH GUL KHATTAK<sup>1</sup>, HAFSAH ARSHAD<sup>2</sup>, KINZA ANWAR<sup>3</sup>, SAEEDA TAJ<sup>4</sup>, MALIHA IFTIKHAR<sup>5</sup>, SAIF ILYAS<sup>6</sup>, MOHAMMAD QASIM ALI<sup>7</sup>

<sup>1,2</sup>Senior Lecturer, Ibadat International University, Department of Physical Therapy, Islamabad

<sup>3</sup>Senior Lecturer, Department of Rehabilitation and Allied Health Sciences, Riphah International University, Islamabad

<sup>4</sup>Lecturer, Bashir Institute of Health Sciences, Islamabad

<sup>5</sup>Demonstrator, Helping Hand Institute of Rehabilitation Sciences, Abbottabad

<sup>6</sup>Consultant Physiotherapist. Ginnastic Physiotherapy and Nutrition, Islamabad

<sup>7</sup>Clinical Physiotherapist, Aadam Life Care physiotherapy Center, Rawalpindi

Correspondence to Dr. Hafsa Arshad, Email: [hafsah.arshad@uipt.uol.edu.pk](mailto:hafsah.arshad@uipt.uol.edu.pk), Cell: 0331-5165234

## ABSTRACT

**Aim:** To find out frequency of depression, anxiety and stress among medical undergraduate students.

**Methodology:** A descriptive cross-sectional survey was conducted in medical colleges of Rawalpindi and Islamabad from January 2021 to June 2021. After approval from institutional ethical committee, sample size was calculated by using open epitool and calculated sample size was 356. Non-probability convenient sampling technique was used for data collection. The participants of age 17 and 26 years, healthy adults and both genders were included in the study. Students who were married, with disability, taking any sedatives and diagnosed with psychological disorders or illness were excluded. Written consent was taken from each participant. Data was collected by using semi-structured questionnaire which comprised of two sections, first part included demographic information and second part included DASS-21 questions. Data was analyzed by using SPSS 24.

**Results:** The overall mean age of sample was  $21.14 \pm 3.6$  years with a range: 17-26 years. Majority of the study participant were females 202(56.7%) while 154(43.3%) were males. Depression was found in 67.4%, anxiety in 62.6% and stress in 72.5% undergraduate medical students. Depression, anxiety, and stress was more prevalent among females in comparison with male gender.

**Conclusion:** The current study indicates depression, anxiety and stress were highly prevalent among medical students. For better performance in studies there is a need to take early measures to prevent mental health problem among students.

**Keywords:** Anxiety, Depression, Medical students, Stress

## INTRODUCTION

World Health Organization (WHO), described health as “a state of complete physical, mental, social well-being and not merely the absence of disease or infirmity”<sup>1</sup>. Mental health often neglected by people as they perceive being disease free and physically well marks for good health. Due to increased prevalence and progression of disease worldwide, mental health disorders are identified as a public health issue and leading cause of disability<sup>2</sup>. Psychological symptoms of stress are depression and anxiety, which left untreated can affect personal and professional responsibilities of an individual<sup>3</sup>. By definition stress is “discrepancy between environmental demand and individual capacity of a person to overcome the demands (stressors). It happens when a person come across a situation and have a feeling of being overwhelmed and worried which they cannot handle<sup>4</sup>. Anxiety is physiological and a psychological response which is usually associated with feeling of uneasiness, worry, dread or fear to anticipate about future without any recognizable provoking stimulus, while depression is characterized by persistent feeling of sadness, helplessness, reduced ability to enjoy life, irritability, hopelessness, guilty feelings, feeling of emptiness, low self-worth that interfere with daily activities of life and loses interest in activities that were once pleasurable<sup>5</sup>.

A significant number of undergraduate university students has been reported to suffer from depression, anxiety and stress which triggers the idea of suicide among them<sup>6</sup>. University students undergoes through pivotal transitory period from teenage to adulthood during which they experience different stressors in academic, emotional, behavioral, social and physical change leading to mental health problem from general fatigue, anxiety, eating problem, depression and difficulty in concentration<sup>7</sup>. These stressors have adverse effect on educational performance and psychological health of students. According to WHO report, more than 300 million individuals are found to be living with depression and 10 to 30% students experience academic stress which

Accepted on 25-12-2022

interferes utterly with their academic performance<sup>8</sup>. Globally, studies have reported moderate to high frequency of stress, anxiety and depression amongst various undergraduate university students<sup>9,10</sup>. It is observed that psychotic problem, depression, mood swing, anxiety, drug abuse and mental disorders are very high in undergraduate students when compared to general population<sup>11</sup>. Mental health problem among under graduate can negatively affect quality of life and academic performance and learning abilities, therefore necessary measures should be taken for prevention of stressors to improve mental health<sup>12</sup>. So, the current study was planned to find out frequency of depression, anxiety and stress among medical students.

## METHODOLOGY

The descriptive, cross-sectional study was conducted between January 2021 to June 2021 in medical colleges of Rawalpindi and Islamabad. After receiving approval from ethical research committee, sample size was determined by open epitool by considering confidence level at 0.95 and desired precision of estimate at 0.05. Non-probability convenient sampling technique was used for selection of participants. Data was acquired from a total of 356 undergraduate medical students. The participants of age 17 and 26 years, healthy adults and both genders were included in the study. Students who were married, with disability, taking any sedatives and diagnosed with psychological disorders or illness were excluded. Written informed consent was obtained from participants. Data was collected by using a semi-structured questionnaire consisting of two parts, first part included demographic information and second part included DASS-21 questions. Demographic information encompassed age, gender, place of residence, socio-economic status, and academic year. Self-reported, Depression Anxiety Stress Scale (DASS-21) was used which consists of a total of 21 questions, divided into three subscales that has 7 items to assess range of emotional symptoms common to depression (DASS 21-D), anxiety (DASS 21-A), and stress (DASS 21-S) over the past week. Four-point Likert scale is

Received on 16-08-2022

used for scoring of each item 0 for “did not apply to me” to 3 for “applied to me very much”. Because long form of DASS has 42 items so the final score is multiplied by 2. Zero is the minimum and 42 is the maximum score of the scale.

**Statistical analysis:** By applying descriptive statistics frequencies and percentages was calculated for qualitative variables and mean and standard deviation for quantitative variables. Chi square test of independence was applied to analyze the association between genders with significant value considered less than 0.05. All the data was statistically analyzed on SPSS version 24.

**RESULTS**

Among 356 participants, 202(56.7%) were females and 154(43.3%) were males. The overall mean age was 21.14±3.6 years with a range: 17-26 years. 213(59.8%) students were living with family and 143(40.2%) were living in hostel. Regarding socio-economic status most of the students belonged to middle class 218(61.2%) (Table 1).

Table 1: Demographic characteristics of participants

Variable	n=356	%
Age (Mean ±S. D)	21.14 ± 3.6	
Gender		
Male	154	43.3
Female	202	56.7
Place of residence		
Living with family	213	59.8
Living in hostel	143	40.2
Type of family		
Nuclear family	196	55.1
Joint family	160	44.9
Socio-economic status		
Low	37	10.4
Middle	218	61.2
High	101	28.4
Physical activity		
Yes	126	35.4
No	230	64.6
Academic Year		
1st year	91	25.6
2nd year	70	19.7
3rd year	83	23.3
4th year	48	13.5
5th year	64	17.9

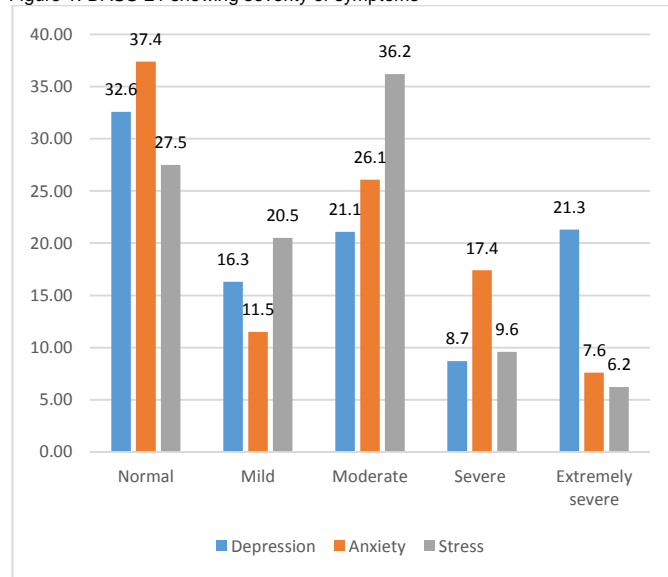
Table 2: Comparison between gender

Variable	Male	Female	Pvalue	
Depression	Normal	65(42.2%)	51(25.2%)	0.003
	Mild	30(19.5%)	28(13.9%)	
	Moderate	32(15.8%)	43(27.9%)	
	Severe	11(7.1%)	20(9.9%)	
	Extremely severe	16(10.3%)	60(29.7%)	
Anxiety	normal	89(57.8%)	44(21.8%)	0.001
	mild	21(13.6%)	20(9.9%)	
	moderate	30(19.5%)	63(31.2%)	
	severe	10(6.5%)	52(25.7%)	
	Extremely severe	4(2.6%)	23(11.4%)	
Stress	normal	66(42.9%)	13(15.8%)	0.001
	mild	23(14.9%)	50(24.8%)	
	moderate	47(30.5%)	82(40.5%)	
	severe	11(7.1%)	23(11.4%)	
	Extremely severe	7(4.5%)	15(7.4%)	

We found that amongst medical students 67.4% had depression, 62.6% from anxiety and 72.5% had stress. Furthermore depression, anxiety and stress were classified into five categories that include normal, mild, moderate, severe and extremely severe. In depression 116(32.6%) were normal, 58(16.3%) had mild symptoms, 75(21.1%) had moderate symptoms, 31(8.7%) had severe and 76(21.3%) had extremely severe symptoms. In anxiety, 133(37.4%) were normal, 41(11.5%) had mild anxiety, 93(26.1%) had moderate anxiety, 62(17.4%) had severe anxiety and 27(7.6%) had extremely severe anxiety. For stress, 98(27.5%)

were normal, while 73(20.5%) had mild, 129(36.2%) had moderate stress. However, among students 34 (9.6%) and 22 (6.2%) had severe and extremely severe stress respectively (Figure 1). In comparison with the male students, higher rate of depression, stress and anxiety among female students with significant p values of 0.003, 0.001, and 0.001 respectively as shown in Table 2.

Figure 1: DASS-21 showing severity of symptoms



**DISCUSSION**

This study was conducted to determine the frequency of depression, anxiety, and stress among medical undergraduate students. In the current study, depression was 67.4%, anxiety found 62.6% and stress among students was 72.5%. Ameer et al found the prevalence of depression to be 76% among students<sup>13</sup>. Study conducted by Shahwaz et al on undergraduate medical students showed prevalence of depression 51.3%, anxiety 66.9% and stress 53% respectively which were consistent with our study results findings<sup>6</sup>. A study conducted on undergraduate medical students in Saudi Arabia reported the prevalence of stress showed to be 68% which also supports our results<sup>14</sup>. In another survey done by Teh C.K. et al prevalence of depression was 30.7%, 55.5% anxiety and 16.6% stress among university students which is lesser than our study findings. The difference in results may be due to cultural factors or the environment<sup>3</sup>.

The current study showed that depression, anxiety and stress was more prevalent among females in comparison with male gender. Our study findings were consistent with the previous survey conducted by Singh et al in which they found that female participants reported high level of depression, anxiety and stress in comparison to their male counterparts<sup>15</sup>. Level of stress, depression and anxiety reported by Noman Rehmani and colleagues among female undergraduate students in Pakistan were also found to be similar with our study results<sup>16</sup>. A study conducted in United kingdom showed high prevalence of depression among female university students<sup>17</sup>. This could be due to social norms and cultural attitudes among women in Pakistan that results in high prevalence of three disorders as compared to male gender.

Depression, stress and anxiety among undergraduate students has multiple academic, social, psychological, financial and biological risk factors. A study in Japan reported that students with self-esteem were more likely to develop mental health problems<sup>18</sup>. Psychological risk factors have been invariably linked with depression, stress and anxiety. Students who live away from their hometown and family for study purpose develop feeling of loneliness in the beginning of university life until they make social

connections and friends at university<sup>19</sup>. Ghodasara et al in their survey also found that medical and other health related students were more prone to have depression in contrast to non-medical students<sup>20</sup>. This could be due the fact that medical students have both academic and clinical work load side by side which puts an extra burden on them<sup>21</sup>.

## CONCLUSION

The current study concluded that depression, anxiety, and stress were prevalent among medical students. There is need to take early measures to prevent mental health problem among students for better performance in studies.

**Limitations:** The current study not included and compared other medical and allied health care professionals. No formal interview was conducted, questionnaire was distributed among students and subjective information was collected.

**Recommendations:** Future studies should be conducted with large population size and in different settings. Further factors including pre-existing mental conditions, family history and coping strategies which help in improving their mental health were also assessed.

**Conflict of Interest:** Authors declare no conflict of interest.

**Authors' contributions:** **HGK and HA:** Research concept, design, manuscript writing, **HA and KA:** Data analysis and interpretation, **ST and MI:** Literature search, **SI and MQA:** Data collection and assembly of data, **KA:** Critical revision of the article

## REFERENCES

- World Health Organisation. 1994 [Available from: <https://www.who.int/about/governance/constitution>]
- Wainberg ML, Scorza P, Shultz JM, Helpman L, Mootz JJ, Johnson KA, et al. Challenges and opportunities in global mental health: a research-to-practice perspective. *Current psychiatry reports*. 2017;19(5):1-10.
- Teh CK, Ngo CW, binti Zulkifli RA, Vellasamy R, Suresh K. Depression, anxiety and stress among undergraduate students: A cross sectional study. *Open Journal of Epidemiology*. 2015;5(04):260.
- Rehmani N, Khan QA, Fatima SS. Stress, Anxiety and Depression in students of a private medical school in Karachi, Pakistan. *Pakistan journal of medical sciences*. 2018;34(3):696.
- Wahed WYA, Hassan SK. Prevalence and associated factors of stress, anxiety and depression among medical Fayoum University students. *Alexandria Journal of medicine*. 2017;53(1):77-84.
- Iqbal S, Gupta S, Venkatarao E. Stress, anxiety & depression among medical undergraduate students & their socio-demographic correlates. *The Indian journal of medical research*. 2015;141(3):354.
- Buchanan JL. Prevention of depression in the college student population: a review of the literature. *Archives of psychiatric nursing*. 2012;26(1):21-42.
- Gautam D, Aryal SC, Dilhara Fernando T, Afza T, Deepak TR, Airee YS, et al. Prevalence of Depression, Anxiety & Stress among First Year Students in Physiotherapy Colleges at Bangalore, India. *Indian Journal of Physiotherapy & Occupational Therapy*. 2020;13(1).
- Beiter R, Nash R, McCrady M, Rhoades D, Linscomb M, Clarahan M, et al. The prevalence and correlates of depression, anxiety, and stress in a sample of college students. *Journal of affective disorders*. 2015;173:90-6.
- Bruffaerts R, Mortier P, Kiekens G, Auerbach RP, Cuijpers P, Demyttenaere K, et al. Mental health problems in college freshmen: Prevalence and academic functioning. *Journal of affective disorders*. 2018;225:97-103.
- MacKean G, editor *Mental health and well-being in post-secondary education settings*. CACUSS preconference workshop on mental health; 2011: Citeseer.
- January J, Madhombiro M, Chipamaunga S, Ray S, Chingono A, Abas M. Prevalence of depression and anxiety among undergraduate university students in low-and middle-income countries: a systematic review protocol. *Systematic reviews*. 2018;7(1):1-5.
- Khan AU, Ali S. Prevalence of depression and its associated factors among nursing students in Karachi, Pakistan. *Pakistan Journal of Public Health*. 2019;9(1):34-6.
- Abdulghani HM, AlKanhal AA, Mahmoud ES, Ponnampuruma GG, Alfaris EA. Stress and its effects on medical students: a cross-sectional study at a college of medicine in Saudi Arabia. *Journal of health, population, and nutrition*. 2011;29(5):516.
- Singh A, Lal A, Singh S. Prevalence of depression among medical students of a private medical college in India. *Online Journal of Health and Allied Sciences*. 2011;9(4).
- Yasmeen Q, Yasmeen N, Malik F. Study of psychological stress, anxiety and depression among female students of gc women university faisalabad pakistan (gcwuf). *Independent Journal of Allied Health Sciences*. 2021;4(01):04-9.
- Macaskill A. The mental health of university students in the United Kingdom. *British Journal of Guidance & Counselling*. 2013;41(4):426-41.
- Ratanasiripong P, China T, Toyama S. Mental health and well-being of University Students in Okinawa. *Education Research International*. 2018;2018.
- Kawase E, Hashimoto K, Sakamoto H, Ino H, Katsuki N, Iida Y, et al. Variables associated with the need for support in mental health check-up of new undergraduate students. *Psychiatry and clinical neurosciences*. 2008;62(1):98-102.
- Ghodasara SL, Davidson MA, Reich MS, Savoie CV, Rodgers SM. Assessing student mental health at the Vanderbilt University School of Medicine. *Academic Medicine*. 2011;86(1):116-21.
- Chernomas WM, Shapiro C. Stress, depression, and anxiety among undergraduate nursing students. *International journal of nursing education scholarship*. 2013;10(1):255-66.