PREVALENCE AND CORRELATES OF STRESS, ANXIETY AND DEPRESSION AMONG UNDERGRADUATE STUDENTS OF KHYBER MEDICAL UNIVERSITY, PESHAWAR; A CROSS SECTIONAL STUDY

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ABSTRACT

Objectives: The aim of this study is to find out prevalence of depression, anxiety and stress. Furthermore, to evaluate potential risk factors that correlates with DAS.

Methods: A cross-sectional study was conducted in KMU, Peshawar. Data was collected from 306 undergraduate students who willingly participated by filling a self-reported symptoms questionnaire which focused on diagnosis of DAS. The data was analysed by SPSS version 22.

Results: Out of 306 students, prevalence of depression, anxiety and stress were 199 (65%), 215 (70.3%) and 69.7% respectively. Anxiety was more prevalent in female students while depression and stress were present equally in both genders. Educational (academic performance, post-graduation plans, pressure to succeed) as well as social (relationship with friends and family, homesickness) were significantly related to DAS. Content and time wasted on social media were not associated with DAS according to this study.

Conclusion: It was observed that the frequency of depression, anxiety and stress among undergraduate students of KMU were high. Significant association was found between DAS and potential educational as well as social risk factor. These findings highlight the need to address mental health problems

Keywords: Depression, Anxiety, Stress, Undergraduate Student

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INTRODUCTION

Mental health is necessary for us to deal with daily life stresses and to perform efficiently in community.[1] Presence of psychological health problems among students is gradually being identified as important public concern.[2]Considerable proportion of university undergraduate students are found to be stressed, anxious and depressed.[3,4] The development from childhood to adulthood undergoes through various stressful time in which person experience various conflicts in academic, behavioural, emotional, social and economic areas as well as physical and social changes.[5] College and university students experience stressors that may contribute to the development of mental problems ranging from fatigue, difficulty in concentration, anxiety, depression, eating disorders and other psychiatric illnesses.[6,7] Sadly, the occurrence of psychological stress in many young adults often disrupts the completion of normal development which also effect educational tasks.[8] Academics, Inferiority complex, lower self-esteem, low satisfaction of life and negative perception of body image has been associated with increased risk of anxiety and depression in young adults which may result in impairment of educational and social functioning.[9-11] Undergraduates with financial instability, poor sleep, poor social support and bad relationships with friends and family experience high level of stress, anxiety and depression.[12-15]

In mental health problems psychological morbidities are most common globally, particularly in developing nations.[16,17] According to national epidemiological survey of United States and studies conducted in Australia and Bangladesh showed that more than 50% undergraduate students were found to have some kind of mental health issue.[8-20]

According to study in UK, Canada, China and Malaysia, revealed that overall incidence of mental disorders in undergraduate students was 17.3%, 30%, 11% and 41.9% respectively.[21-24] According to study in Turkey, 27.1% students were depressed, 47% were reported cases of anxiety and 27% were stressed.[25] Survey in India showed that 53 % undergraduate students were affected by stress, 66.9% from anxiety and 51% were affected from depression.[3] According to two different studies conducted in medical colleges of Pakistan, the rate of depression and anxiety were 70% and 60 % respectively.[26,27]

Psychological distress has impact on individual's cognitive functioning and may have a negative effect on the student's learning abilities; therefore, measures should be taken to improve mental health and prevent students from unnecessary stress.[28] In Pakistan according to our knowledge work has been done to find out prevalence of psychological problems in undergraduates; however, limited data is available regarding its correlates.[26,27,29] The aim of this study to find out prevalence of depression stress and anxiety and to identify potential factors that may correlates with DAS.

METHODS

A cross-sectional survey was conducted on undergraduate students of Khyber Medical University Peshawar, Pakistan from September 10, 2018 to January 5, 2019. Sampling population for this study was undergraduate students from the department of IPMR, INS and IPMS of KMU. Epi info was used to calculate our Sample size at confidence interval of 95% with margin for error of 5%. 306 Students were selected for this study through simple random sampling. Lottery method was used for randomization. 170 participants were taken from IPMS, 81 were selected from IPMR, and 55 were recruited from INS. Undergraduate students of IPMR, INS or IPMS, were included while students of MPHIL, Masters and other medical students were excluded from survey. Questionnaire for this study was composed of standard DASS 21 questions, demographics and list for stressors.[30,31] Questionnaires were distributed among 330 participants; on the basis of eligibility criteria 306 subjects were selected. SPSS version 22 was used for data analysis. Result was presented in percentages, tables and pie charts. Statistical evaluation was made by applying the chi-square test. Correlation was investigated by applying Pearson and Spearmen correlation tests. The outcomes were considered to be significant if p value was less than 0.05.

RESULTS

A total of 306 sample size was taken in the study. The participants ranged from a minimum of 17 years to maximum of 30 years. The mean age of the students was 21.12 years with standard deviation of 2.2. The baseline characteristics of our participants were given in table 1. The prevalence of stress, anxiety and depression was found 69.7%, 70.3% and 65% respectively (table 1). Regarding severity of symptoms 28.10 % students were having mild symptoms of stress while 7.19 % of students were having extremely severe symptoms of stress. 10.78 % of students were experiencing mild symptoms of anxiety while 23.20 % were having extremely severe anxiety. Students experiencing mild depression were 18.63% while 12.09% experienced severe depression (Figure 1).

On the basis of gender, 44.8% participants of our sample were females while 55.2 % were male students. The prevalence of stress in female was 70.1 % while in males it was 68.7 %. In female students' prevalence of anxiety was 66.5% and in male it was 61.5%.

Prevalence of depression in females was reported in 62.8% while in male students it was 66.9%. There was no significant relationship between gender and stress and depression (P=0995, 0.385 respectively). While significant relation was found between gender and anxiety (P=0.017). On the basis of institutes,

55.6 % (170) of students of our sample were from IPMS, 26.5 % (81) were from IPMR and 18 % (55) of participants were from INS. The prevalence of stress, anxiety and depression among students of different institutes is represented in table 1.

In this study numbers of potential risk factors were tested for association with stress, depression and anxiety. Significant relation was found between DAS and academic performance, pressure to succeed, post-graduation plans, relationship with family, relationship with friends, level of physical activity, overall health, body image, homesickness, quality of sleep self-esteem and changing seasons (p value<0.05). While non-significant relationship of DAS was found with content on social media, time wasted on social media and extracurricular activities (p value >0.05) (table 2).

	Normal	Mild	Moderate	Severe	Extremely Severe
Stress	30.72%	28.10%	22.22%	11.76%	7.19%
Anxiety	29.74%	10.78%	25.49%	10.78%	23.20%
Depression	34.97%	18.63%	23.20%	11.11%	12.09%
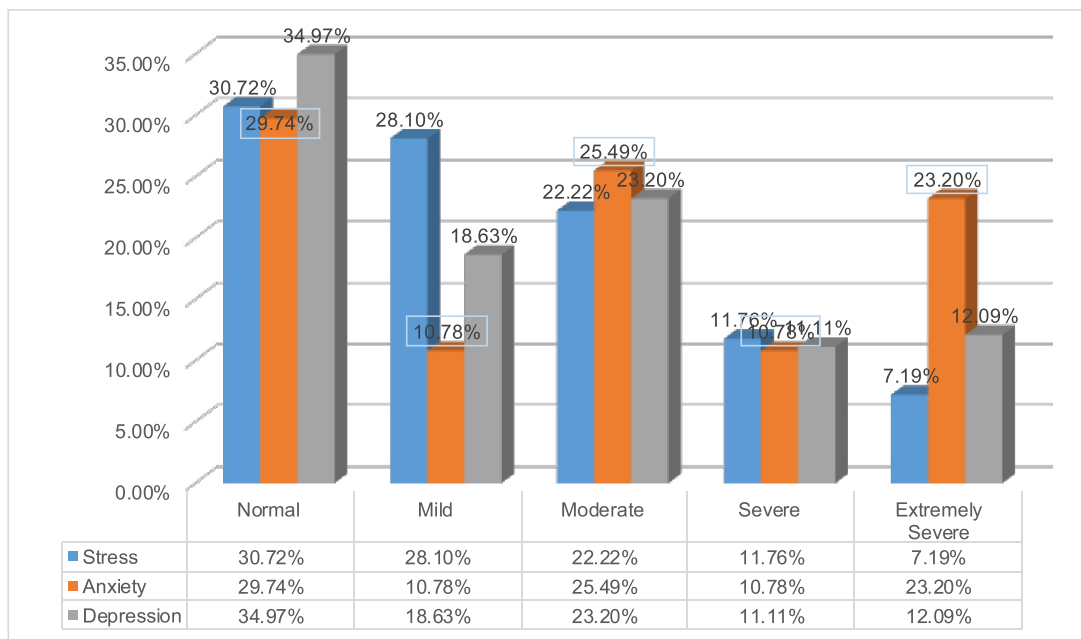
Figure 1: Severity distribution (%) of DASS scores among students

Variables	Total	IPMS	IPMR	INS
No. of participants	306	170	81	55
Mean age	21.12 ± 2.2	21.24 ± 2.5	20.85 ±2.0	21.16 ±1.7
Gender				
Male	169	99	36	34
Female	137	71	45	21
Marital status				
Single	276	147	77	52
Married	30	23	4	3
Household				
Day scholar	133	83	37	17
Hostelities	173	87	48	38
Stress				
Yes	212 (69.70%)	135 (79.5%)	61 (74.1%)	42 (76.4%)
No	94 (30.70%)	35 (20.5%)	21 (25.9%)	13 (23.6%)
Anxiety				
Yes	215 (70.30%)	129 (75.9%)	58 (71.6%)	45 (81.82%)
No	91 (29.7%)	41 (24.1%)	23 (28.4%)	10 (18.18%)
Depression				
Yes	199 (65%)	115 (67.6%)	47 (58%)	37 (67.3%)
No	107 (35%)	55 (32.4%)	34 (42%)	18 (32.7%)

Table 1: Baseline characteristics and prevalence of stress, Anxiety & Depression

Stressors	P-value for stress	p-value for anxiety	p-value for depression
Academics	0.038	0.409	0.55
Pressure to succeed	0	0.005	0.025
Post-graduation plans	0.014	0.492	0.545
Financial concern	0.04	0.491	0.027
Relationship with family	0.025	0.027	0.001
Relationship with friends	0.099	0.179	0.001
Level of Physical Activity	0.074	0.015	0
Overall Health	0.004	0	0
Body image	0.005	0.028	0
Homesickness	0.001	0	0.002
Quality of sleep	0.02	0.001	0.002
Content On social media	0.208	0.006	0.001
Time Wasted on social media	0.62	0.683	0.275
Self-esteem	0.045	0.015	0.01
Changing of the season	0.034	0	0
Extracurricular activities	0.389	0.146	0.115

Table 2: Association of DAS with potential risk factors.

DISCUSSION

Psychological health is necessary for us to deal with daily life stresses and to work efficiently. In mental health issues, prevalence of stress, anxiety and depression are most common globally. This study highlighted the prevalence of stress, anxiety and depression among undergraduate students of Khyber Medical University and to evaluate the potential risk factors that may correlates with DAS. This study shows the prevalence of depression to be 65%, prevalence of anxiety 70.3% and prevalence of stress 69.7%. Study conducted on undergraduate medical students of Karachi showed the prevalence of depression and anxiety to be 70 % which is similar to the result of this study.[26] The prevalence of stress in undergraduates was reported 68% by the study done in Saudi Arabia, while a study organized in Iran showed prevalence of stress to be 62%, which is close to this study.[32,33] According to a study conducted on undergraduate students of Sindh, 69.6% prevalence of anxiety was reported.[34] Study organized in India showed the prevalence depression to be 60%, while prevalence of anxiety was reported 66%, the rate of which is close to the result of this study.[3,35] Study conducted by R. Beiter at el on undergraduate students showed the prevalence of depression, anxiety and stress as 33%, 40% and 38% respectively which is quite lower than our study.[30] Although we relied on same questionnaire as used by R. Beiter at el the difference in result can be due to the fact that there is difference in genetic makeup and environment of the two population. Furthermore, quality of life is better in US than in Pakistan which is reflected in this study.[36] According to study conducted in Sweden prevalence of depression was found to be 12.2 % which is significantly

lower than our findings.[28] This difference may be due to difference of instrument used to assess depression and difference in satisfaction of life between two countries.[28] Study conducted on undergraduate physical therapy students of different institutes of Sindh reported 54.2 % prevalence of stress , while 48% prevalence of depression.[34] This was quite different than our findings. It can be due to the difference in instrument that assessed stress and depression. Moreover, the difference could be due to the fact that score of stress and depression can vary from institute to institute because of different educational schedule.

This study showed that there is no association of gender with depression (p=0.385) and stress (p=0.995). According to this study, male and females both can be equally affected from stress and depression. However, anxiety (p=0.017) can be more prevalent in females than male students. Study organized in UK,Brazil and Sweden revealed that depression was more significant in females than males.[21, 28, 37]This is in contrast to our study which can be due to the difference in population. Other reason for the difference could be due to the fact that our study was based on a single public University, male and female students would have to face same academic stressors while above mentioned studies were conducted in different universities, so students will have to face different level of stressors. However, study conducted in Norway support our results; their study also concluded that there is no association of stress and depression with gender. Regarding anxiety most studies supported our results and showed that anxiety is associated with the gender difference.

This study also investigated correlation of potential risk factors with depression, stress and anxiety. Our study finds that there is association of DAS with academic performance, pressure to succeed, post-graduation plans. Relationship with family, relationship with friends, level of physical activity, overall health, body image, homesickness quality of sleep self-esteem and changing seasons which is supported by Study by R. Beiter at el.[30]Non-significant relation was found with content on social media and time wasted on social media. Our findings were not in correlation with findings of study done by Bieter at el, which showed positive relation of DAS with time wasted and content of social media.[30]This difference in result could be due to less use of social media in our community.[38]

CONCLUSION

This cross-sectional study showed that undergraduate students were depressed, anxious and stressed. Results of this study show that there is significant association of DAS with educational as well as socio-demographics risk factors.

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