ORIGINAL ARTICLE:

EVALUATION OF MENTAL DISORDERS AMONG DAY SCHOLARS AND HOSTEL MEDICAL STUDENTS-PLACE OF RESIDENCE MATTERS

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ABSTRACT

OBJECTIVE

To assess stress, anxiety, and depression among medical students and compare the mental health status of medical students living at home and in hostels.

STUDY DESIGN:

Cross-sectional study

PLACE AND DURATION OF STUDY:

The study was conducted at a private Medical University from 10th July to October 2019 in Karachi.

SUBJECTS AND METHODS:

Data was collected through convenient sampling technique from 300 undergraduate medical, of which, 284 participants completed the questionnaire. After taking informed consent data was collected. The data collection tools used was Perceived Stress Scale-10 for stress and Aga Khan University Anxiety Depression Scale for anxiety and depression. All the data were analysed on SPSS version 26.

RESULTS

Results showed the mean age of the students was 21.3± 1.9 years. A moderate to severe level of stress was found in 221 (77.8%) medical students while a majority (69 %) of the students screened positive for anxiety and depression. Moderate to severe stress was found in 162 (77.9%) of the hostel students, while anxiety and depression was also higher among hostel students (73.6%). According to PSS-10 scale, moderate to high levels of stress was found to be statistically significant in younger students as compared to older students (P-value 0.03).

CONCLUSION:

Most medical students had psychological issues especially higher in those living away from home. Detection of stress, anxiety and depression among medical students at early stage with provision appropriate counselling help preventing complications.

KEYWORDS:

Anxiety, Depression, Stress, Medical students, Hostel Residents, PSS-10, AKUADS.

INTRODUCTION

Psychological distress and consequent mental disorders is considerably high in university students globally. Medical education is one of the most challenging field of studies and medical students often face immense levels of academic pressure due to a heavy workload, the need to perform well on exams, and working with critically ill patients [1]. This leaves them with limited free time to pursue their interests [2]. Recent studies among medical students have found depression to be significantly high in medical students while anxiety has been associated with negative mental state. Unfortunately, such

conditions along with stress, are not only under-diagnosed but also untreated or inadequately manage [3].

In Pakistan, mental health issues amongst students is becoming a major concern, with increasing suicide risks and studies in recent years reporting high prevalence of anxiety from 44% to 74.2% among medical students [1]. Stigma associated with mental disorders can be a means of denial towards oneself or towards others, and this leads to reluctance in seeking help and suffering in isolation. Some studies showed that lack of communication and evasion of support amongst students generate prolonged adverse consequences and intensified social seclusion, leading to a viscous cycle of increasing depression. This formulates suicidal intentions and depression, both of which are considered substantial risk factors leading to attempted suicide among medical students. WHO reports suicide as the second major cause of mortality after injury due to road traffic accident among young person (15-29 years). Suicide was also found higher among girls (15-19 as a second highest cause of death after maternal conditions, while it was the third leading cause of death among boys [4]. Although suicide is underreported in Pakistan, studies done on depression showed similar results as reported in other international studies and high frequency of depression among medical students should be reduced as it is the most common predictor of suicide ideation [5].

Undergraduate medical training is linked with extreme parental expectations, budget concerns, social pressure, sparsity of leisure time and strained relationships [5]. All this along with the tremendous course burden that medical studies demand, pushes the students towards underlying depression, which if left unchecked is the leading cause of suicide worldwide [6].

Living arrangements could play a crucial role in a student's mental health and well-being, as students living at home may have access to emotional support and encouragement from their families, which can help reduce stress levels and improve academic performance [7]. While on the other hand, hostel students living away from home may experience homesickness, social isolation, and difficulties adjusting to a new living environment.
Some studies also demonstrated that anxiety and depression to be associated with respective years of medical school life. In another Chinese study the prevalence of depression and anxiety was seen as 57.5% and 30.8 % in medical students with depression and anxiety symptoms higher in older age (> 20 years) students, with financial burden, curriculum load and insomnia in students.
It has also being observed that depression and anxiety was more in those students who were living alone or those with poor relationship with other classmates [8, 9].
A meta-analysis done shows that hostel life could be a trigger towards suicidal ideations in medical students and students residing alone or elsewhere were greatly exposed to suicidal ideation as compared to those living with parents, classmates, or roommates [10]. Study done in Vietnam showed that overall depression was present along with suicide ideation and found to be highly associated with financial issues, physical inactivity and poor self-determined motivation especially among senior students [11].

Considering the increasing high prevalence of mental health disorders within medical students in Pakistan and the consistent rise of suicides among Pakistani youth, and the dearth of data on mental health of the medical university hostel premises, the purpose of this research is to identify and compare stress, anxiety and depression in the medical students residing with family and those residing in the Hostel for understanding the influence of residential status.

METHODS

Study Design and Study Participants:

This cross-sectional study was conducted from 10th July to October 2019 from a population of undergraduate medical (from 1st year to final year) students at a private medical university in Karachi. We expected to approach all 500 students but only 300 were available. Ethical approval was gained by the institutional committee of the institute of Health Sciences-Department Research Committee on 2nd July-2019 also confidentiality about all participants was ensured. All medical students were included and we followed a convenient sampling technique to recruit participants. All medical students were eligible for this study. Participants who had a history of previous psychiatric illness as self -reported were excluded.

Instruments:

The socio-demographic data on variables such as gender, age, year of study, parental expectation, and locality (urban/rural) etc was collected after consent.

The tenth version of **Perceived Stress Scale (PSS-10)** is widely used for the assessment of the perception of stress as it has internal consistency reliability of (α=0.78) and the moderate concurrent criterion validity of (r=0.39, p< 0.001). Individual scoring on the PSS can range from 0 to 40 with a higher score indicating higher perceived stress. The score is categorized from 0 to 13 is considered mild stress, scores from 14 to 26 is considered moderate stress, while a score between 27 to 40 indicates severe stress [12].

The **Aga Khan University Anxiety and Depression (AKUADS) Scale was used for** anxiety and depression. It has been developed for the Pakistani population having higher internal consistency. The cut-off score of 20 is considered for depression. It is 66 percent sensitive and 79 percent specific, with 83 percent positive predictive value (PPV) and 60 percent negative predictive value (NPV) [13].

Data Collection:

Following a convenient sampling technique, participants were recruited in this study. Students were informed about the study, and informed consent was sought and noted. Students were reassured about the confidentiality of their data and requested to complete the questionnaire, which included demographic information followed, by PSS-10 and AKUADS.

Data Analysis:

The data was statistically analyzed using SPSS-26 (Statistical package for social science version 26). Descriptive statistics (frequencies and percentages) were used to analyze socio-demographic variables, while scoring was done for AKUADS and PSS-10. Chi Square test was done to analyze significant

associations between the AKUADS and PSS- 10 categories and other demographic categorical variables. For significance level α=0.05 was set.

Results:

Out of 300 undergraduate students available, all were approached, 284 (38.7% males and 67.3% females) students participated in the study and filled the questionnaire with a response rate of 94.6 %. The overall age ranged from 17 years to 28 years (mean age 21.3 ± 1.9 SD). Majority of the students studying in this University were from outside Karachi (73.2%), while 26.8% were Karachi residents. Table 1 shows the demographic characteristics of this study.

Table 1: Sociodemographic Characteristics of the Participants

Sample Characteristics	N	%	Mean ± SD
Gender			
Male	110	38.7	
Female	174	67.3	
Age			21.3 years ± 1.9 SD
Year of Study			
1st Year	68	23.9	
2nd Year	68	23.9	
3rd Year	61	21.5	
4th Year	68	23.9	
5th year	19	6.7	
Type of Residency			
Day-scholar	76	26.8	
Hostel	208	73.2	

The psychological stress according to PSS-10 score was low in 63 (22.2%) participants, while 221 (77.8%) reported it to be moderate to severe stress. The mean PSS-10 score was 18.1 ±6.9. More than half the participants had depression 196 (69%), and the mean AKUADS score was found to be 27.6±13.7 as shown in Table 2.

Table 2: Frequency distribution of Stress, Anxiety and Depression (N=284).

Scale	N	%	Mean	SD
PSS-10				
Low Stress	63	22.2 %	18.1	±6.9
Moderate Stress	199	70.1 %		
High Stress	22	7.7 %		
AKUADS				
No ADS	88	31 %	27.6	±13.7
ADS	196	69 %		

Among hostel students 162 (77.9%) had moderate to severe stress, and significantly higher depression scores (73.6%) as shown in Table 3 below.

Table 3: Association of Stress, Anxiety and Depression with place of residence (N=284).

Scale	Variable (Residency)		P-Value
	Home-based	Hostel	
PSS-10			
Low Stress	17 (22.4%)	46 (22.1%)	
Moderate Stress	53 (69.7%)	146 (70.2%)	.997
High Stress	6 (7.9%)	16 (7.7%)	
AKUADS			
No ADS	33 (43.4 %)	55 (26.4%)	.009
ADS	43 (56.6%)	153 (73.6%)	

Significance level was set at α =< 0.05

Taking mean age of our study (21 years) as a cut-off for the age category, 105 (66.9%) younger participants had moderate stress, while 18 (11.5%) had high levels of stress which was statistically prominent in younger students as compared to older students as shown in Table 4 below.

Table 4: Association of Stress, Anxiety and Depression with Age Category (N=284).

Scale	Variable (Age Category)		P-Value
	Younger	Older	
PSS-10			
Low Stress	34 (21.7%)	29 (22.8%)	
Moderate Stress	105 (66.9%)	94 (74%)	.033
High Stress	18 (11.5%)	4 (3.1%)	
AKUADS			
No ADS	48 (30.6%)	40 (31.5%)	.484
ADS	109 (69.4%)	87 (68.5%)	

Significance level was set at α =< 0.05. Whereas, ADS is considered as anxiety - depression symptoms.

DISCUSSION

Medical education is very demanding and stressful which can impact negatively on the mentality of students. In addition to the educational and clinical pressures, medical students often face personal and social challenges, such as adapting to a new living environment, financial concerns, and maintaining relationships with family and friends. These factors contribute to stress, anxiety, and depression, which can impact a student's academic performance, overall well-being, and future career as seen in other studies. In our study, two -third of hostel residents reported depression and anxiety according to AKUADS Scale, while half of our home-based students reported depression and anxiety, which is much lower than seen in hostel students. Earlier studies done support our finding that the medical students residing on campus had greater rates of anxiety and depression in comparison to those living at home [14-19]. Hostel residents are also at risk of other sources of stressors such as financial constraints, adaptation to a new environment and first time having changes in living arrangements [20]. It is important to note that those Medical students live by themselves were having suicidal ideation compared those living with family or shared accommodation. Conversely, living away from home may lead to a higher suicidal tendency which was shown to be statistically significant as in the meta-analysis study [10].

Numerous previous studies conducted worldwide with medical students have revealed that stress and depression are the commonest mental health disorders in the medical students which is also evident from our study [17, 21-23]. In this study, considerably higher rates of depression was found in either groups of medical students. This finding was similar with the results of study carried out medical student in the same region (Karnataka), that revealed high prevalence (71.25%) among all students [10]. The findings of our study also highlight that moderate to high level of stress and depression are more prevalent in hostel students which is congruent with previous studies, who reported that apart from other factors of psychological distress in medical students, accommodation away from home can be a major source of stress and depression among the hostel students as a key trigger.

While the present study is unable to provide a concluding result for the comparison between poor living arrangements and suicidal ideation, the finding of high prevalence of depression in hostel students offer some insight into this mental health issue. Previous research suggests that depression was found to be significantly related with suicide ideation and poor social interaction which acts as a major factor for suicidal ideation [18, 20]. Although a significant association was found between stress and age but there was no significant association between depression and age categories while. This finding is contrary to findings from some other studies, in which stress was not significantly related to age of medical students [24].

Limitations

We acknowledge limitations in this study. The data in this study was gathered cross-sectionally, and therefore the findings of this study should be interpreted with caution, and a longitudinal study is desirable. Secondly, the findings of this study cannot be generalized as the results are based on data gathered from a private medical university. Despite these limitations, this study was focused on to

analyze differences of mental disorders among medical university hostel residents and home-based day scholars.

CONCLUSION

In conclusion, depression, anxiety and stress was found to be alarmingly high in both hostel and home-based medical students. However, depression and anxiety were more prevalent in dormitory or hostel students while stress was found to be elevated in both hostel and home students. Also, those belonging to younger age group were more prone to be affected by stress than their counterparts.

Recommendations

Based upon the findings of this study we recommend a more engaged role of student counselors in medical universities to address mental stress among medical students. Medical schools should prioritize creating supportive and inclusive learning environments, promoting self-care and stress management strategies, and providing adequate mental health resources and support services for students especially those residing away from homes.

Medical universities should also routinely conduct some skill development workshops on time and stress management, planning and leadership skills for the medical students, especially those residing in hostels and lacking family support and should incorporate awareness and services for mental health disorders in their official policies and procedures.

Healthy activities should also be promoted in the university to improve the mental health indicators among the medical students in Pakistan.

Conflict of Interest:

None to declare.

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02	Afshan Arzoo	Lecturer, Dow institute of medical technology (DIMT), Dow University of Health Sciences	Data Curation, and data analysis Methodology Investigation Statistical Analysis Writing and editing- Initial write up draft, final write up.
03	Dr. Maria Atif	Assistant Professor, SPH, Dow University of Health Sciences	Writing – review & editing write up Formal analysis Supervision Analysis of Methodology
04	Aafiya Zafar	Student of Bachelors in Psychology, Department of Psychology, faculty of Arts, University of Alberta, Edmonton, Alberta.	Writing, review and editing of research work.