

ASSESSMENT OF DEPRESSION AMONG UNIVERSITY STUDENTS USING PATIENT HEALTH QUESTIONNAIRE

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ABSTRACT

Objective: To determine prevalence of depression among university students in Pakistan according to patient health questionnaire.

Study Design: Cross-sectional survey.

Place and Duration of Study: University of Karachi, from May 2017 till Aug 2017.

Methodology: Depression was assessed by using Patient Health Questionnaire. Questionnaire was distributed to 130 students of different departments.

Results: Response rate of our study was 72.30%. Males were slightly more (51.10%) than females in our survey. Majority of our survey participants belonged to on-campus (59.60%) courses. Students belonging to Punjabi community were having the highest participation (35.10%) in the survey. Urdu speaking and Pathan students were next in line with higher participation (33% and 21.30% respectively). The number of the students from Anatomy department was in higher proportion (59.60%). A big majority of students belonged to moderate to severe depression categories (54.30%, 13.80% and 10.60% with moderate, moderately severe and severe depression respectively). Females were suffering more from moderate to severe depression (78.20%) than the males. Students younger than 22 years of age were suffering more from depression according to our study (92.50%). Sindhi students were all suffering from severe depression while those of Urdu speaking were in moderate to moderately severe category.

Conclusion: Hence it is concluded from our survey that four out of five students are suffering from depression and it was also affected by different demographic variables as well.

Keywords: Depression, Patient Healthcare Questionnaire, University students.

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INTRODUCTION

Depression is a mood disorder that causes persistent feelings of sadness and loss of interest. It can lead to a variety of emotional and physical problems¹. It is a leading cause of disability worldwide effecting more than 264 million people of all ages². Major depressive disorders place a considerable burden on both society and individual, poor health and impaired functioning are also found to be associated with depressive symptoms^{3,4}. It is deeply rooted in human behavior effecting thoughts, mood and physical health. It may appear as insomnia or hypersomnia, appetite changes, hopelessness, loss of interest and

even suicidal thoughts. Even when there are many treatments for depression around 76-85% people in low and middle income countries receive no treatment⁵. The main reason behind this is the social stigma about mental health disorders acting as a barrier to seeking medical attention.

Anyone can fall a prey to depression but University students have relatively higher rates of depression than the general population⁵. Most of the studies report prevalence of anxiety or depression above 35%^{6,7}. Factors causing anxiety and depression among students are financial pressure, workload, academic pressure or mistreatment. Depression can affect student's working and cognitive ability. Some students even attempt suicide due to mental crisis. According to statistics from 2017 to 2018 around 34.2% of college and university students who received mental

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health services had also seriously considered to commit suicide⁸.

In this study, we used patient health questionnaire PHQ-9 for evaluating depression among students. It is a diagnostic tool developed by Pfizer. PHQ-9 scores of 5-9, 10-14, 15-19 and 20-27 represent mild, moderate, moderately severe and severe depression respectively. This study is performed to evaluate the severity of depression among the students of University of Karachi, Pakistan.

METHODOLOGY

The study was done at Physiology department of university of Karachi, from May 2017 to Aug 2017. A validated questionnaire was distributed among students of different departments to check if there was any prevalence of depression there. Ethics approval was obtained from institutional review board of the University of Karachi before hand.

Sample size was calculated by using following formula;

$$\text{Sample Size} = \frac{Z_{1-\alpha/2}^2 p(1 - p)}{d^2}$$

Z_{1-α/2} is standard normal variate (at 5% type 1 error (p<0.05) it is 1.96. As in majority of studies p-values are considered significant below 0.05 hence 1.96 is used in formula.

p = Expected proportion in population based on previous studies or pilot studies= 0.70⁷

d = Absolute error or precision= 0.10

Sample size = 81.

Convenient sampling technique was used.

All the undergraduate students of different departments were included in the study while graduate and post graduates were excluded.

SPSS-20 is used to calculated frequency statistics and also inferential statistics of our data. A p-value <0.05 is taken as statistically significant.

RESULTS

Response rate of our study was 72.30%. Males were slightly more (51.10%) than females

in our survey. Majority of our survey participants belonged to on-campus (59.60%) courses. Students belonging to Punjabi community were having the highest participation (35.10%) in the survey. Urdu speaking and Pathan students were next in line with higher participation (33% and 21.30% respectively). The number of the students from Anatomy department was in higher proportion (59.60%). A big majority of students belong

Table-I: Demographic characteristics of study sample (n=94).

Variable	n (%)
Gender	
Male	48 (51.10)
Female	46 (48.90)
Age	
≤22	66 (70.20)
>22	28 (29.80)
Term Time	
On-Campus	56 (59.60)
Off-Campus	38 (40.40)
Ethnicity	
Punjabi	33 (35.10)
Urdu Speaking	31 (33.00)
Pathan	20 (21.30)
Hazara	5 (5.30)
Sindhi	5 (5.30)
Department	
Anatomy	56 (59.60)
Computer Science	25 (26.60)
Pharmacy	8 (8.50)
Chemistry	5 (5.30)
Year of study	
2nd Year	5 (5.30)
3rd Year	16 (17.00)
4th Year	73 (77.70)
Severity of Depression	
None	10 (10.60)
Mild	10 (10.60)
Moderate	51 (54.30)
Moderately Severe	13 (13.80)
Severe	10 (10.60)

ged to moderate to severe depression categories (54.30%, 13.80% and 10.60% with moderate, moderately severe and severe depression respectively). Females were suffering more from moderate to severe depression (78.20%) than the males. Students younger than 22 years of age were

suffering more from depression according to our study (92.50%). Sindhi students were all suffering from severe depression while those of Urdu speaking were in moderate to moderately severe category. All the students of Chemistry, Computer Sciences and Pharmacy departments were suffering from moderate to moderately severe depression.

sity of Karachi; on-campus and off-campus courses. Majority of our survey participants belonged to on-campus (59.60%) courses.

City of Karachi is also famous for its versatility of ethnicities as people belonging to different cultural group reside here. In previous studies they also calculated the ethnical variation among students^{10,11}. Hence we also calculated this

Table-II: Prevalence of depression among university students in Pakistan stratified by gender (n=94).

Variables	Total (n=94)	Males (n=46) n (%)	Females (n=48) n (%)	p-value
**Severity of Depression				
Moderate	51	25 (52.10)	26 (56.50)	NA*
Moderately Severe	-	-	-	
Severe	10	0 (0.00)	10 (21.70)	

*p-value cannot be calculated as four cells have count less than 5, **Cases of none and mild depression are excluded.

Table-III: Prevalence of depression among university students in Pakistan stratified by age (n=94).

Variables	Total (n=94)	≤ 22 (n=66) n (%)	>22 (n=28) n (%)	p-value
**Severity of Depression				
Moderate	51	43 (65.20)	8 (28.60)	NA*
Moderately Severe	13	13 (19.70)	0 (0.00)	
Severe	10	5 (7.60)	5 (17.90)	

*p-value cannot be calculated as four cells have count less than 5, **Cases of none and mild depression are excluded.

Table-IV: Prevalence of depression among university students in Pakistan stratified by ethnicity (n=94).

Variables of Depression	Total (n=94)	Hazara (n=5) n (%)	Pathan (n=20) n (%)	Punjabi (n=33) n (%)	Sindhi (n=5) n (%)	Urdu Speaking (n=31) n (%)	p-value
Moderate	51	-	10 (50.00)	18 (54.50)	-	23 (74.20)	NA*
Moderately Severe	13	-	-	5 (15.20)	-	8 (25.80)	
Severe	10	-	-	5 (15.20)	5 (100.00)	-	

*p-value cannot be calculated as four cells have count less than 5, **Cases of none and mild depression are excluded.

Table-V: Prevalence of depression among university students in Pakistan stratified by department (n=94).

Variables	Total (n=94)	Chemistry (n=5), n (%)	Computer Sci. (n=25), n (%)	Pharmacy (n=8), n (%)	Anatomy (n=56), n (%)	p-value
**Severity of Depression						
Moderate	51	5 (100.00)	20 (80.00)	8 (100.00)	18 (32.10)	NA*
Moderately Severe	13	-	5 (20.00)	-	8 (14.30)	
Severe	10	-	-	-	10 (17.90)	

*p-value cannot be calculated as four cells have count less than 5, **Cases of none and mild depression are excluded.

DISCUSSION

The questionnaire was distributed among 130 students of the university out of which 94 responded, hence making our response rate of 72.30%. Males were slightly more (51.10%) than females in our survey. A previous study on university students also showed more male participation among university students⁹. There are generally two types of courses offered at Univer-

ethnicity among students as well. Students belonging to Punjabi community were having the highest participation (35.10%) in the survey. Urdu speaking's and Pathans were next in line with higher participation (33% and 21.30% respectively). As far as departmental involvement in the survey is concerned, the study was mainly conducted by department of Anatomy hence the number of the students from Anatomy department was in higher proportion (59.60%) then

other departments. Students of Computer Science department participated with second highest participation rate (26.60%). Few students also participated from Pharmacy and Chemistry departments. Mostly (77.70%) were from 4th year of their studies.

As we calculated different grades of depression according to patient health questionnaire, it was found out that there was a high percentage of depression among university students. A big majority of them belonged to moderate to severe depression categories (54.30%, 13.80% and 10.60% with moderate, moderately severe and severe depression respectively). Previous studies done internationally showed that most of the students were in mild to moderate category of depression which was in contrary to our results^{12,13}.

We also calculated inferential statistics of our data. Prevalence rates of depression from moderate to severe category stratified by gender, age, ethnicity, and departments. A *p*-value cannot be calculated for any of the table as four or more cells have value less than 5 in them. As far as prevalence of depression according to gender is concerned, it was found out that females were suffering more from moderate to severe depression (78.20%) than the males. A recent study showed the similar results¹⁴. Students younger than 22 years of age were suffering more from depression according to our study (92.50%). Such a high rate of depression among young students was showed by international studies previously¹⁵⁻¹⁷, but not in Pakistan before.

Ethnic variations were prominent in our survey group as shown earlier. Sindhi and Urdu speaking students were most affected by depression (100% for both groups). Sindhi students were all suffering from severe depression while those of Urdu speaking were in moderate to moderately severe category. Punjabi students were mostly affected by moderate category of depression (54.50%). A previous study showed that ethnic variation is significantly associated with depression¹⁸. As far as departments are concerned, all the students of Chemistry, Computer

Sciences and Pharmacy departments were suffering from moderate to moderately severe depression while 74.30% students of Anatomy department were found to be suffering from moderate to severe depression.

CONCLUSION

Hence it is concluded from our survey that four out of five students are suffering from depression and it was also affected by different demographic variables as well. Causes must be sorted out in this regard as depression itself can lead to many disorders. Studies on greater sample size can be done in future.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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