Prevalence of Depression, Anxiety and Stress among Students of Punjab University, Chandigarh

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ABSTRACT

Background: Depression, Anxiety and Stress (DAS) disorders begin at an early age and are often recurring. The aim of the study was to find the status of the mental health of students of the Punjab University, with the objectives to find prevalence and correlates of DAS.

Methodology: This was an institution based cross-sectional study conducted in Punjab University, Chandigarh for a period of 5 months (January - May 2014).Nine departments and one Centre were selected by random sampling method and 400 students who gave their consent to participate were selected from these Departments and Centre by convenient sampling method. DASS-21 was used for finding the prevalence of DAS. Data was analyzed with the help of Microsoft Excel 2007. Percentages were used to draw inferences.

Results: The overall prevalence of depression, anxiety and stress came out to be 59.2%, 86.5% and 52.7% respectively. The prevalence of the DAS decreased with age. All the morbidities were more among females than males.

Conclusion: High prevalence of DAS, and high co-morbidity was seen among the students of the Punjab University. Poor mental health awareness, stigma related to mental disorders and limited youth-based services combine to make youth an underserved population in our country.

Key-words: University students, depression, anxiety, stress, Chandigarh, India

INTRODUCTION

The World Health Organization (WHO) reported in 2001 that about 450 million people worldwide suffer from some form of mental disorder and that one in four people meet criteria at some point in their life.[1]Depression is a major cause of morbidity,[2]with a lifetime prevalence varying from 3% in Japan to 17% in the US. In most countries, the number of people who would suffer from depression during their lives falls within an 8-12% range.[3] At any given point of time, 25% students reported symptoms of Depression.[4] In India 90% of people who need mental health support do not have access to it. There is a significant human resource gap of mental health professionals.

According to WHO report, practically all psychiatrists who have had extensive experience in working with college students agree that about 10% of the members of any institution of higher learning are likely to have emotional problems at some time or other during each year which interferes seriously with their work. Very few institutions have sufficiently well-developed psychiatric services to deal with that number of students. Depression, anxiety, stress and substance abuse are mere symptoms of the hidden, unresolved, and ignored emotional issues which cumulatively grow inside insidiously. This study aimed to find the status of the mental health of students of the Punjabi University. The objectives of our study were to find

prevalence of depression, anxiety and stress (DAS) among students and to find correlates of depression, anxiety and stress among students of Punjab University.

METHODS

Study settings and duration: This study was conducted in an institution based cross-sectional study conducted in Punjab University, Chandigarh for a period of 5 months (January - May 2014).

Sampling Method and Sample Size: Nine Departments and one Centre were selected out of 83 departments and 16 Centres of by Punjab University, Chandigarh by random sampling method. All the students enrolled in 09 Departments and 01 Centre was contacted for the present study. Initially, 412 Students gave their consent for the present study, but 12 had withdrawn from it subsequently.

Tools and technique: Depression Anxiety Stress Scale-21 (DASS-21)[5]was used for finding the prevalence (2-week prevalence) of DAS. The DASS-21 subscales can be used to measure the dimensions of DAS. For finding the correlates, a questionnaire was developed. This self-administered questionnaire was not intended to ask sensitive information as it was to be filled in the classrooms only.

Data collection: Questionnaires were distributed to the students and after briefing them about the questionnaire, they were given sufficient time to fill it. Consent was taken from the students and their confidentiality has been maintained.

Students studying in P.U., Chandigarh of both the genders (males and females) who gave their consent were included in the study. Those who were absent on the day of visit were excluded from the study.

Statistical Analysis: The data entry was done in MS Office Excel 2007. Analysis was done in the form of frequency tables and percentages. Chi-square test was applied for seeing association of variables. P value of <0.05 was set as point of statistical significance.

Ethical Clearance: The study was approved by the Institute Ethics Committee at GMCH, Chandigarh.

RESULTS

The present study was conducted among the students of the Punjab University, which showed the overall prevalence of depression, anxiety and stress to be 59.3%, 86.5% and 52.8% respectively. There was high co-morbidity between DAS (39.5%).There was concentration of high prevalence of all three disorders in younger age groups.

Table 1 shows the distribution of participants having DAS according to socio – demographic profile. Depression, anxiety and stress, all were more among younger age group i.e. below 19 years (33.2, 27.2, 30.8 respectively). The prevalence of the DAS decreased with age. All the morbidities were more among females than males and also among students who were living in hostels and PG.

Table 1: Distribution of participants having DAS according to socio – demographic profile (N =400)

Variables	Depression N= 237 (59.3)	Anxiety N=346 (86.5)	Stress N= 211 (52.8)
Age (in years)			
17-18	46 (19.4)	59 (17.1)	37 (17.5)
19	31 (13.8)	38 (10.98)	28 (13.3)
20	9 (3.7)	21 (6.1)	10 (4.7)
21	40 (16.8)	52 (15.1)	28 (13.3)
22	52 (21.9)	75 (21.7)	44 (20.9)
23	24 (10.1)	38 (10.98)	30 (14.2)
24	8 (3.3)	23 (6.6)	13 (6.2)
25-26	14 (5.9)	23 (6.6)	14 (6.6)
27-31	13 (5.4)	17 (4.9)	7 (3.3)
Gender			
Male	56 (23.6)	86 (24.9)	39 (18.5)
Female	181 (76.4)	260 (75.1)	172 (81.5)
Family type			
Nuclear	181 (76.4)	272 (78.6)	168 (79.6)
Joint	56 (23.6)	74 (21.4)	43 (20.4)
Residence			
Hostel/ PG	135 (56.96)	195 (56.4)	125 (59.2)
Home	102 (43.03)	151 (43.6)	86 (40.8)
Two	117 (29.2)	5(26.3)	0.958
Three	84(21.0)	4(21.0)	0.836
Fourth	44(11.0)	3(15.7)	0.505
Fifth	18(4.5)	1(5.2)	0.232
More than five	16(4.0)	1(5.2)	0.517
Socioeconomic status			
Upper lower*	148(39.0)	8(42.1)	
Lower class	252(63.0)	11(87.8)	0.653

Figures in parenthesis indicate percentage

Table 2: Distribution of participants having DAS according to self-satisfaction and parent's satisfaction in academic performance (N=400)

DAS	Self - satisfaction			Parent's satisfaction		
	Yes	No	Don't Know	Yes	No	Don't Know
Depression (N=237)	85 (21.25%)	121 (30.25%)	31 (07.75%)	136 (34%)	56 (14%)	45 (11.25%)
Anxiety (N=346)	144 (36%)	154 (38.50%)	48 (12%)	212 (53%)	74 (18.50%)	60 (15%)
Stress (N= 211)	76 (19%)	105 (26.25%)	30 (07.50%)	128 (32%)	54 (13.50%)	29 (07.25%)

Figures in parenthesis indicate percentage

Table 3: Distribution of participants having DAS as per self-rating on Physical, Mental and Social aspect (N=400)

DAS	Self - Rating				
	1-4	5-6	7-8	9-10	No Response
Physical aspect					
Depression	25 (73.52)	30 (63.82)	116 (54.20)	20 (39.21)	46 (85.18)
Anxiety	33 (97.05)	43 (91.48)	183 (85.51)	39 (76.47)	48 (88.89)
Stress	17 (50)	31 (65.95)	112 (52.33)	25 (49.01)	26 (48.89)
Mental aspect					
Depression	10 (71.15)	46 (80.70)	108 (60)	28 (30.10)	45 (84.90)
Anxiety	14 (100)	56 (98.25)	157 (87.22)	72 (77.41)	47 (88.67)
Stress	14 (100)	40 (70.71)	103 (57.22)	29 (31.19)	25 (47.16)
Social aspect					
Depression	13 (100)	41 (55.40)	90 (59.60)	48 (44.03)	45 (84.90)
Anxiety	13 (100)	67 (90.54)	134 (80.74)	85 (77.98)	47 (88.67)
Stress	10 (76.92)	48 (64.86)	82 (54.30)	46 (42.20)	25 (47.16)

Figures in parenthesis indicate percentage

Table 4: Distribution of participants having DAS as per self-rating on Emotional and Spiritual aspect (N = 400)

DAS	Self-rating					
	1-2	3-4	5-6	7-8	9-10	No Response
Emotional aspect						
Depression	02 (20)	20 (53.05)	37 (45.12)	64 (58.18)	69 (53.90)	45 (84.90)
Anxiety	08 (80)	37 (100)	52 (63.41)	99 (90)	103 (80.46)	47 (88.67)
Stress	0 (0)	22 (59.45)	29 (35.36)	61 (55.45)	74 (57.81)	25 (47.16)
Spiritual aspect						
Depression	12 (38.70)	09 (100)	30 (54.54)	91 (60.67)	50 (49.01)	45 (84.90)
Anxiety	28 (90.32)	09 (100)	43 (78.18)	137 (91.34)	82 (80.39)	47 (88.67)
Stress	04 (12.90)	09 (100)	35 (63.63)	78 (52)	60 (58.82)	25 (47.16)

Figures in parenthesis indicate percentage

Table 5: Comparison between severely depressed students and non-depressed students according to different severity labels

Aspect	Severe and Extremely severe depression (n = 46) (%)	Normal/ Non-depressed (n=163) (%)	p-value
Anxiety	46 (100)	121 (74.23)	0.0002
Stress	18 (39.13)	48 (29.44)	0.2856
Gender:			
Males	17 (36.95)	49 (30.06)	0.4795
Females	29 (63.04)	114 (69.93)	0.4795
Type of Family:			
Nuclear family	36 (78.26)	138 (84.66)	0.4201
Joint family	10 (21.73)	25 (15.33)	0.4201
Burdened due to academics:			
Overburdened due to academics	21 (46.65)	53 (32.51)	0.1416
Not Overburdened	25 (54.34)	110 (67.48)	0.1416
Self-satisfaction level:			
Not self-satisfied	19 (41.30)	44 (26.99)	0.0919
Self-satisfied	16 (34.78)	97 (59.50)	0.0050
Don't know	11 (23.91)	22 (13.49)	0.1380
Parents satisfaction level in academics:			
Parents not satisfied	11 (23.91)	21 (12.88)	0.1089
Parents satisfied	22 (47.82)	114 (69.93)	0.0092
Don't know	13 (28.26)	28 (17.17)	0.1435
Consumption of alcohol:			
Drink	21 (45.65)	32 (19.63)	0.0007
Don't drink	25 (54.34)	129 (79.14)	0.0014
Economic condition:			
Good economic condition	32 (69.56)	117 (71.70)	0.9203
Moderate	14 (25)	46 (27.60)	0.9203

Distribution of participants having DAS according to self-satisfaction and parent's satisfaction in academic performance is shown in table 2. Almost a quarter of students (73%) of students who were not satisfied with academic performance were depressed while 93.2% had shown anxiety and 63.1% presented with stress. 72.7% of students whose parents were not satisfied with their academic performance were depressed in comparison to 54.3% depressed among whose parents were satisfied.DAS was higher among students who felt deprived of mother or father's love. Respondents belonging to moderate economic condition had shown a higher prevalence of all the three disorders. Table 3 shows the distribution of participants having DAS as per self-rating on physical, mental and social aspect; whereas table 4shows distribution of participants having DAS as per self-rating on emotional and spiritual aspect. Comparison between severely depressed students and non-depressed students according to different severity labels has been shown in table 5.Forty-six respondents who belonged to an extreme zone of the disorders had rated themselves considerably low on physical, mental, social and spiritual aspect but high on emotional aspect.

Out of total 400 students there were 46 respondents who presented with severe depression or extremely severe depression with concomitant severe anxiety or extremely severe anxiety. The average scores on self-rating of these 46 respondents on physical, mental, social, emotional and spiritual aspect of themselves were 6.3, 6.3, 6.2, 8 and 5.9 respectively, in contrast to 7.4, 8.2, 7.9,7.2 and 7.1 of that of 163 non-depressed respondents. These 46 respondents, who belonged to an extreme end of the disorder, have rated themselves considerably low on physical, mental and social aspect. However, those 46 respondents had rated themselves with high score when it came to emotional aspect, which again points to their awareness of their analytical mind and introversion.

DISCUSSION

The present study was conducted among the students of the Punjab University, which showed the overall prevalence of depression, anxiety and stress to be 59.2%, 86.5% and 52.7% respectively. In a study conducted by Teh C.K.et al. in Malaysia where the prevalence for moderate to extremely severe depression, anxiety and stress are 30.7%, 55.5%, and 16.6% respectively, this is lower than another study done among Malaysian university students whereby the percentages are 37.2%, 63.0%, and 23.7% for depression, anxiety and stress.[6,7] However, in present study severe and extremely severe anxiety together made 43.4% which was about 13% higher than the study done among Malaysian university students where 29% had severe or extremely severe anxiety.[6]High prevalence of anxiety was due to high number of females presenting severe and extremely severe anxiety. Moreover, the sample had more females than males, which have perhaps exaggerated the prevalence of anxiety. In the present study 16% of males had severe and extremely severe depression whereas females accounted for 9%; which is like results from study on students of University of Malaysia. Although, the overall prevalence was higher in females because of large number of females were in mild and moderate zones. Male gender roles tend to emphasize greater levels of strength, independence, and risk-taking behavior. Reinforcement of this gender role often prevents males from seeking help for suicidal feelings and depression, which drifts them further to an extreme end. Hence, suicides rates are more in males across all countries.[8]

Our study showed high co-morbidity between depression, anxiety and stress (39.5%). There was high co-morbidity between depression and anxiety, which came out to be 56.2%. High co-morbidity between depression and anxiety is again in accordance with previous studies.[9] A study of 1997 done in US stated that approximately 85% of patients with depression also experience significant symptoms of anxiety. Similarly, co-morbid depression occurred in up to 90% of patients with anxiety disorders.[10,11] There was concentration of high prevalence of all three disorders in younger age groups. Prevalence of depression was highest in age of 19yrs followed by 21 yrs. Mean age in the study was 21.6 years (range 17-31yrs). It was estimated in the study published in The Lancet that in India the standardized rate of suicide per 1,00,000 people aged 15 years or older, of 26.3 for men and 17.5 for women, was the second highest in the world.[12] Prevalence of overall depression in males was 23.6% in contrast to 76.4% of that in females. However, 36.95% of males belonged to severe and extremely severe depression whereas females accounted for 63.04%. A study done in United States stated that males are four times more likely to have severe and extremely severe depression, and die by suicide than females, although more women than men report suicide attempts.[13] Prevalence of depression was 23.6% in students from Joint families as compared to 76.4% in students from nuclear families. This can be due to large chunk of students staying in nuclear families who find it difficult to share their feelings with their parents.

Forty four percent of students expressed overburden due to test schedule; 69.7% of them presented with depression and 94.4% show anxiety. All three disorders are significantly higher in students who have expressed overburdening than the rest of the

students. On the other hand, 72.7% of students whose parents are not satisfied with their academic performance are depressed in contrast to 54.3% depressed among whose parents are satisfied. With increasing competition and vast curriculum students these days are unable to devote time to recreational activities. 73% of students who are not satisfied with academic performance were depressed while 93.2% have shown anxiety and 63.1% presented with stress. Low self-esteem, pessimism about oneself and poor academic performance are undeniably the factors, which are interlinked to each other are the reason for the psychological disturbances as well.[14]

Prevalence of all three disorders was higher among students who felt deprived of father's love. Parental love is the most significant factor that determines the child's growth in psychological terms. Parental discord often leaves unresolved emotional issues which in later life manifests in form of depression, anxiety and stress. In a review done by Maggie Zgambo, *et al.* in 2012; it was seen that children and adolescents who live without parents exhibit higher levels of depressive symptoms than those with parents around them.[15] Depression is decreased by higher levels of parental care and lower levels of parental indifference.[16,17] Greenberger and colleagues (2000) stipulated that strong positive family relationships can lessen the symptoms of depression.[18] Many other factors, such as loss of loved ones, conflicts with parents, teachers and peers and significant physical diseases may have important effects on adolescent DAS symptoms.[19] Ninety respondents admitted that they took alcohol, 45.65% of them were depressed in contrast to 54.34% depressed who did not drink. Anxiety and stress were also higher among drinker. A study conducted in Chennai in 1986 showed strong association of suicidal tendency with alcohol, which was reported to be 10.42%.[20] Nearly 70% of the students belonged to families having good economic status whereas rest of the students belonged to moderate economic status. Twenty five percent of the respondents belonging to moderate economic condition had shown depression in contrast to 69.56% of those who belonged to higher economic status. Low income and less education have shown to be strong predictors of a range of mental health problems.[21]

CONCLUSION

The main findings of the study are the high prevalence of depression, anxiety and stress and high comorbidity among the students of the Punjab University. Prevalence was higher in younger students. However, severe and extremely severe cases of depression and stress were more in females.

Poor mental health awareness, stigma related to mental disorders, limited youth and other community-based services combine to make youth an underserved population in our country.

LIMITATIONS

Collected data was based on self-reporting. Under or over reporting of behavior might had affected the results. Due to social stigma, many students might have hidden the real facts and their feelings. As data was collected in classrooms, we could not ask sensitive questions which could have helped us to gain deeper understanding about depression, anxiety and stress. As time was limited a more comprehensive survey and detailed interviews could not be done.

RECOMMENDATIONS

Our study reveals high level of depression, anxiety and stress among students of the Punjab University. Hence, efforts should be made to provide them counseling and support from parents as well as professional counselors, for the promotion of their overall health. Good health of students of the Punjab University can be ensured only when the assessment of their psychological aspect, which includes depression, anxiety and stress, is done whenever a student approaches the doctor in the health Centre. This is also the right time to start the mentoring program to help individuals' growth.

At the national level, we have national mental health program but its impact has not reached the students of the colleges and the universities so there is the need of orientation of educational administrators and faculty members of the Punjab University, by close association with students regarding various dimensions of mental, emotional, psychological and spiritual aspect of health care, so that well-thought well-planned structured educational program may be chalked out at the national level.

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