ORIGINAL ARTICLE

Psycho-social health problems: Prevalence and associated factors among students of professional colleges in Jammu

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Citation

Article Cycle

Abstract

Background: Psycho-social health problems are an area of concern worldwide especially among students pursuing professional courses. The competition for grades, carrier insecurity often contribute to various emotional disturbances such as stress, anxiety and depression. **Aims and Objectives**: to determine the prevalence of stress, anxiety and depression in students of two main professional streams (medical & engineering) and to find out various factors associated with them. **Material and methods**: A cross-sectional study was conducted among students of medical and engineering stream using DASS 42 scale. Further a self administered, pretested questionnaire was used to elucidate information on socio-demographic and personal characteristics. **Results**: Out of a total of 480 students (300 MBBS and 180 Engineering), prevalence of stress, anxiety and depression in medical & engineering students was 47.6 %, 68.6%, 43.7% and 41.1%, 71.1 % & 40.0 % respectively. On Multiple Regression analysis, relationship with family members emerged as a significant independent predictor for all the three psychogenic factors. **Conclusions**: A high prevalence of depression, anxiety and stress was found among students of both the streams. There is a need to introduce simple counselling and stress management techniques in curriculum to combat such morbidities

Keywords

Introduction

Psycho-social problems are of major public health concern due to their high prevalence rates and difficult identification & treatment. A person could be termed depressed if he shows a combination of low mood, loss of interest, feelings of guilt, low self-esteem, disturbed appetite & sleep, or disturbed concentration.(1) The American Psychological Association characterizes anxiety and stress by feelings of tension, worried thoughts and physical

changes.(2,3) Stress is the war one reacts physically, mentally and emotionally to the various conditions. It can lead to mental distress and can have a negative impact on the cognitive functioning and learning.(4) The period of professional education is a sensitive and stressful period in an individual's life span especially among medical and engineering students. Students of such professional courses are under considerable amount of stress and anxiety owing to the ever-increasing load of studies and the burden of expectations from the society. Some of them go to the extent of falling into Depression which itself is proven risk factor for absenteeism, educational under achievement and substance abuse. (5) Medical education is criticised as one of the most demanding and stressful academics, worldwide.(6) It has been reported that a major proportion of medical students consequently suffer from depression, anxiety, and stress.(7,8,9) Yusoff et al also reported that healthy students often develop stress and depression after commencing their medical education.(10) It has been revealed that physicians tend to have a higher suicidal rate than the general population.(11)

Aims & Objectives

1. To determine the prevalence of stress, anxiety and depression among professional students.
2. To find out the various factors associated with these psycho-social morbidities.

Material & Methods

Jammu city, has a population of 5,76,198 individuals. There are a total of 8 professional (2 medical / 2 dental and 4 engineering) institutions teaching professional courses in medicine and engineering.

A cross sectional study was conducted over a period of three months through April to June 2018 in two of these professional institutes, selected randomly. One institute was randomly picked from a group of professional institutions teaching medicine and dental and another from a group teaching engineering using simple random technique.

The study design was reviewed and approved by the Institutional Ethical Committee. After obtaining ethical clearance, permission to conduct the study was sought from both the colleges. All the students were briefed about the objectives of the study and details about the DASS Scale (details given below) were explained to them. Informed verbal consent was obtained from all the voluntary participants. An assurance was given to the students that their personal information would be kept confidential. To ensure anonymity, no question about the name of student was included in the questionnaire. The data was collected by using a self-administered, standardized, semi-structured questionnaire, based on the students' socio–demographic details and personal history regarding substance abuse like smoking and alcohol. DASS Scale was used to study different domains of mental health i.e. Depression Anxiety and Stress.

Depression Anxiety and Stress Scale (DASS): DASS is a 42-item questionnaire which includes three self-report scales designed to measure the negative emotional states of depression, anxiety and stress. Each of the three scales contains 14 items, divided into subscales of 2-5 items with similar content. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia, and inertia. The Anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The Stress scale assesses difficulty in relaxing, nervous arousal, and being easily upset/agitated, irritable/over reactive and impatient. The reliability scores of the depression, anxiety and stress scales in terms of Cronbach's alpha were 0.90.0.92 & 0.92 respectively. Respondents were asked to use 4-point severity/frequency scales to rate the extent to which they have experienced each state over the past one week. Scores for depression, anxiety and stress were calculated by summing the scores for the relevant items. Each subscale was categorized into normal, mild, moderate, severe and extremely severe. DASS scores were collected during relaxed state when there were no exams two weeks before and two weeks afterwards.

Inclusion Criteria: Apparently healthy students, who had given verbal informed consent.

Exclusion Criteria: Students under medication, absent during the study period, incompletely filled questionnaire, lack of interest and not willing to give verbal informed consent.

Statistical analysis: The data was analyzed using SPSS 20 version. Qualitative data was reported as proportions while Mean and SD were used to report quantitative data. Chi square test was used to measure the degree of association among the variables. Means were compared using Student t test and ANOVA. Correlations between continuous variables were calculated using Pearson' correlation

test. Multiple Linear Regression Analysis was performed by Stepwise method to predict the role of most significant variables in determining the DASS scores. P value less than 0.05 was taken as significant.

Results

Four hundred and eighty six students studying in two different professional colleges voluntarily participated in the study, out of which 8 students submitted incomplete questionnaires and were excluded from the analysis. Therefore, a total of 480 students were taken into consideration for analysis purpose, among whom 300 were from medical stream and 180 from engineering stream. The mean age and standard deviation (SD) of the study participants was 20.46 ± 1.32 years, with a range of 18-24 years. Out of the 480 students, 260 (54.2%) were males and 220 (45.8%) were females. The students who resided in the hostel were 195(40.6%) while the day scholars were 285(59.4%).

Out of the total respondents, stress was present in 45.2%, anxiety in 69.6% and depression in 42.3% of students. Results when analysed as per the profession, stress and depression in medical students were on higher sides (47.6 % & 43.7%) in comparison to engineering students (41.1% & 40 %) but the difference was statistically insignificant. On the other hand, anxiety was more seen in engineering students (71.1% vs 68.6%) as shown in [Table1]. Out of all the three sub-scales of psycho-social health (stress, anxiety and depression), only stress was found to be significantly associated with sex. When analysed according to residence, it was seen that Hostellers' were more sufferer from stress, anxiety and depression as compared to Day scholars but statistically significant association was found with stress and depression only. Lower family income and Poor relationship with the parents were significant predictors of all the 3 domains. Other variables which had significant association were Family history of depression or any other psychiatric disorder and presence of any form of stress either in the family or related to the student. Alcohol consumption was a significant determinant for stress. However, no significant association was found with smoking.

Mean scores of Stress, anxiety and depression among medical and engineering students

The overall mean ± SD of scores for stress, anxiety and depression were 14.39 ± 6.18, 10.95 ± 6.79 and 10.69 ± 8.14 respectively. Mean scores of all the sub-scales were higher in medical students in comparison to engineering students but when analysed statistically, difference was significant only for depression scores [Table 2]. Scores when analysed according to semesters, no significant difference was found except for Depression and that too in engineering students alone. Also, the significant correlation was present between different semesters and depression in engineering stream, p value<0.05 [Table 3].

Variables associated with Depression, Anxiety and Stress

On Multiple Linear Regression analysis using Step wise method, independent variables which emerged as significant predictors for stress score were sex, income of the family, relationship with family members and presence of any stress in the family. For anxiety scores, significant predictors were income, relationship and presence of stress in the family. However only stream of education and relationship with parents were significant predictors for depression score [Table 4].

[Figure 1;Figure 2&Figure 3] shows different grades of stress, anxiety and Depression among medical and engineering students respectively.

Discussion

Presence of stress, anxiety and depression among students is a cause of concern as it may impair their academic achievement, personality development and long term professional capabilities. The overall prevalence of stress, anxiety and depression in the present study was 45.2%, 69.6% and 42.3% respectively. Considering the stream of education, the prevalence of above domains of psycho-social health in medical students was 47.6 %, 68.6% & 43.7% respectively. Almost similar prevalence (49.1%) of depression has been reported by Singh A *et al* among medical students.(12) Vaidya PM *et al* in their study reported that 39.4% of students suffered from depression.(13) Comparative results for depression, anxiety and stress were reported by a study conducted in Pakistan i.e. 40.9%, 74.2% & 50% respectively.(14) However, in contrast to our findings, all the respondents reported at least some degree of overall stress in a study conducted by Krishnappa K *et al*.(15) Engineering students have shown a prevalence of 41.1%, 71.1 % & 40 % for stress, anxiety and depression. Study conducted by Waghachavare VB *et al* reported a comparatively

lower stress level (19.7%) in engineering students.(16) Mean score of stress, anxiety and depression in present study were higher for medical students but the difference was statistically significant only for depression among the two streams. Similar significant difference for depression was reported by Devi LS *et al*.(17) In contrast, no statistically significant difference in mean scores was reported by Muddgal A *et al*.(18)

Mean scores of stress, anxiety and depression were not significantly correlated with the semester of study except for depression in engineering students. This was in contrast to results reported by Singh A *et al*.(12) A higher proportion of female students reported stress and depression compared with their male counterparts. This finding is in consistence with other studies. (12,19,20) The reason may be that females articulate depressive symptoms, even minor ones, more easily. Other significant variables found to be associated were monthly family income of the family, relationship with parents, presence of any sort of stress in the family and family H/O depression and alcohol abuse. Kumar GS *et al* also reported a significant association of depression with the presence of family problems and family H/O depression and consumption of alcohol.(21) However, no significant association was found with smoking, similar to the findings reported by Iqbal *et al*.(19) In the current study, residence was again a significant factor associated with the development of stress and depression, with more prevalence seen among Hostellers. This may be due to the fact that presence of family support system could help in coping the stress and depression among the students. The findings are consistent with those reported by Waghachavare VB *et al*.(16)

Conclusion

Students from both the streams have shown a high prevalence of stress, anxiety and depression, with no significant difference in mean scores except for depression. Relationship with family members was found to be a significant independent predictor for all the three psycho-social problems As a health care professional, it is our duty to know the various relevant contributing factors responsible for such morbidities and to identify susceptible students who are at such risk early in their course of the training.

Recommendation

It is recommended that teaching techniques and college environments should be student friendly and adapted to their needs. Further some regular extracurricular activities with universal participation can prove to be useful stress busters. Implementing natural ways like yoga, meditation, relaxation techniques, counselling, and conducting stress management workshops may empower the students to combat with various stressful situations

Limitation of the study

The cross sectional nature of study with sample only from two institutes limits the generalizability of results.

Relevance of the study

Psycho-social morbidities in students pursuing professional courses is a less prioritized topic. Also, literature shows limited evidence on comparative studies in different professional streams. The present study findings provide a baseline for carrying out further multi-centric researches

Authors Contribution

RK: conception, design, data collection, analysis and interpretation of data, literature search, drafting. BL: design, data collection, analysis and interpretation of data and critical revision of manuscript. SJ: literature search, drafting and review of manuscript. RKG: interpretation of data, drafting and critical review of final manuscript. SKR: analysis and drafting. PS: data collection, literature search and drafting

Acknowledgement

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Tables

TABLE 1 ASSOCIATION OF DIFFERENT VARIABLES WITH STRESS, ANXIETY AND DEPRESSION

Variables	Category	Total	Stress N (%)	p value	Anxiety N (%)	p value	Depression N (%)	p value
Course	Medical	300	143(47.6)	0.16	206(68.6)	0.57	131(43.7)	0.43
	Engineering	180	74(41.1)		128(71.1)		72(40.0)	
Sex	Male	260	106(40.7)	0.03	184(70.7)	0.54	105(40.4)	0.36
	Female	220	111(50.5)		150(68.2)		98(44.5)	
Residence	Hosteller	195	99(50.8)	0.04	139(71.3)	0.503	93(47.7)	0.04
	Day Scholar	285	118(41.4)		195(68.4)		110(38.6)	
Monthly Family Income(Rs)	<10,000	27	20(74.1)	0.0073	26(96.3)	0.0037	12(44.4)	0.06
	10-25,000	97	44(45.4)		71(73.2)		38(39.2)	
	25-50,000	163	77(47.2)		115(70.5)		82(50.3)	
	>50,000	193	76(39.4)		122(63.2)		71(36.8)	
Relation with parents	Good	438	186(42.5)	0.000	297(67.8)	0.011	175(39.9)	0.003
	Usual	40	31(77.5)		36(90.0)		27(67.5)	
	Not Good	2	0		1(50.0)		1(50.0)	
Family H/O Depression or any other psychiatric disorder	Yes	52	32(61.5)	0.012	40(76.9)	0.22	36(69.2)	0.00003
	No	428	185(43.2)		294(68.7)		167(39.1)	
Any source of stress	Yes	357	162(45.4)	0.89	261(73.1)	0.004	162(45.4)	0.01
	No	123	55(44.7)		73(59.3)		41(33.3)	
H/O Alcohol consumption in last 2 weeks	Yes	17	2(11.8)	0.004	9(52.9)	0.12	8(47.1)	0.68
	No	463	215(46.4)		325(70.2)		195(42.1)	
H/O Smoking in last 2 weeks	Yes	22	12(54.5)	0.367	15(68.2)	0.88	13(59.1)	0.10
	No	458	205(44.8)		319(69.6)		190(41.5)	

TABLE 2 COMPARISON OF MEAN SCORES OF STRESS, ANXIETY AND DEPRESSION

Parameter	Medical		Engineering		t value	Significance
	Mean	SD	Mean	SD		
Age	20.3767	1.40762	20.5889	1.16172	-1.704	.089
Stress score	14.5033	5.82952	14.2222	6.73485	.482	.630
Anxiety score	11.0333	6.97143	10.8111	6.49090	.347	.729
Depression score	11.48	8.81	9.36	6.70	2.78	0.006

TABLE 3 CORRELATION OF MEAN SCORES OF STRESS, ANXIETY AND DEPRESSION

Semester	Medical				Engineering		
	Stress Mean±SD	Anxiety Mean±SD	Depression Mean±SD		Stress Mean±SD	Anxiety Mean±SD	Depression Mean±SD
2nd	14.27±5.53	11.37±6.98	11.49± 7.64		14.16±6.98	10.87±6.10	9.62±5.56
4th	15.17±6.34	11.54± 6.28	10.38±7.48		14.58±5.89	10.66±7.26	10.75±8.60
6th	13.74±5.68	9.84±6.46	12.57± 10.64		14.08±6.58	11.00±7.11	9.95± 6.99
8th	14.90±5.66	11.39± 8.53	11.66± 9.63		14.00±7.82	10.66±5.15	6.38±3.27
Mean±SD	14.50±5.82	11.03± 6.97	11.49± 8.81		14.22± 6.73	10.81± 6.49	9.36±6.70
Anova	F	0.94	1.015	0.835	0.066	0.028	3.326
	Sig	0.42	0.386	0.476	0.978	0.993	0.021
Pearsons correlation	r	0.002	-0.037	0.036	-0.015	-0.003	-0.152
	Sig	0.977	0.525	0.534	0.839	0.963	0.041
Semester	Medical				Engineering		
	Stress Mean±SD	Anxiety Mean±SD	Depression Mean±SD		Stress Mean±SD	Anxiety Mean±SD	Depression Mean±SD
2nd	14.27±5.53	11.37±6.98	11.49± 7.64		14.16±6.98	10.87±6.10	9.62±5.56
4th	15.17±6.34	11.54± 6.28	10.38±7.48		14.58±5.89	10.66±7.26	10.75±8.60
6th	13.74±5.68	9.84±6.46	12.57± 10.64		14.08±6.58	11.00±7.11	9.95± 6.99
8th	14.90±5.66	11.39± 8.53	11.66± 9.63		14.00±7.82	10.66±5.15	6.38±3.27
Mean±SD	14.50±5.82	11.03± 6.97	11.49± 8.81		14.22± 6.73	10.81± 6.49	9.36±6.70
Anova	F	0.94	1.015	0.835	0.066	0.028	3.326
	Sig	0.42	0.386	0.476	0.978	0.993	0.021
Pearsons correlation	r	0.002	-0.037	0.036	-0.015	-0.003	-0.152
	Sig	0.977	0.525	0.534	0.839	0.963	0.041

TABLE 4 MULTIPLE LINEAR REGRESSION ANALYSIS

	Predictors	B	Std. Error	Regression Coefficient	p value	95% Confidence Intervals
Depression Scores*	Constant	7.824	1.684		0.000	4.51 to 11.13
	Course	5.387	0.748	0.200	0.004	-3.66 to -0.72
	Relation with family members	-2.192	1.196	-0.130	0.000	3.03 to 7.73
Anxiety Scores**	Constant	13.681	1.833		0.000	10.08 to 17.28
	Relation with family members	3.817	0.986	0.170	0.000	1.87 to 5.75
	Any stress in the family	-2.733	0.682	-0.176	0.000	-4.07 to -1.39
	Income	-1.122	0.329	-0.150	0.001	-1.77 to -0.47
Stress Scores***	Constant	14.573	1.849		0.000	10.94 to 18.21
	Income	-1.235	0.304	-0.181	0.000	-1.83 to -0.64
	Sex	2.101	0.564	0.170	0.000	0.99 to 3.21
	Relation with family members	2.387	0.917	0.117	0.009	0.58 to 4.12
	Any stress in the family	-1.617	0.632	-0.114	0.011	-2.85 to -0.37
F*=14.16, p <0.001, F**=14.99, p<0.001, F***=9.206,p <0.001						

Figures

FIGURE 1 DIFFERENT GRADES OF STRESSS AMONG MEDICAL AND ENGINEERING STUDENTS
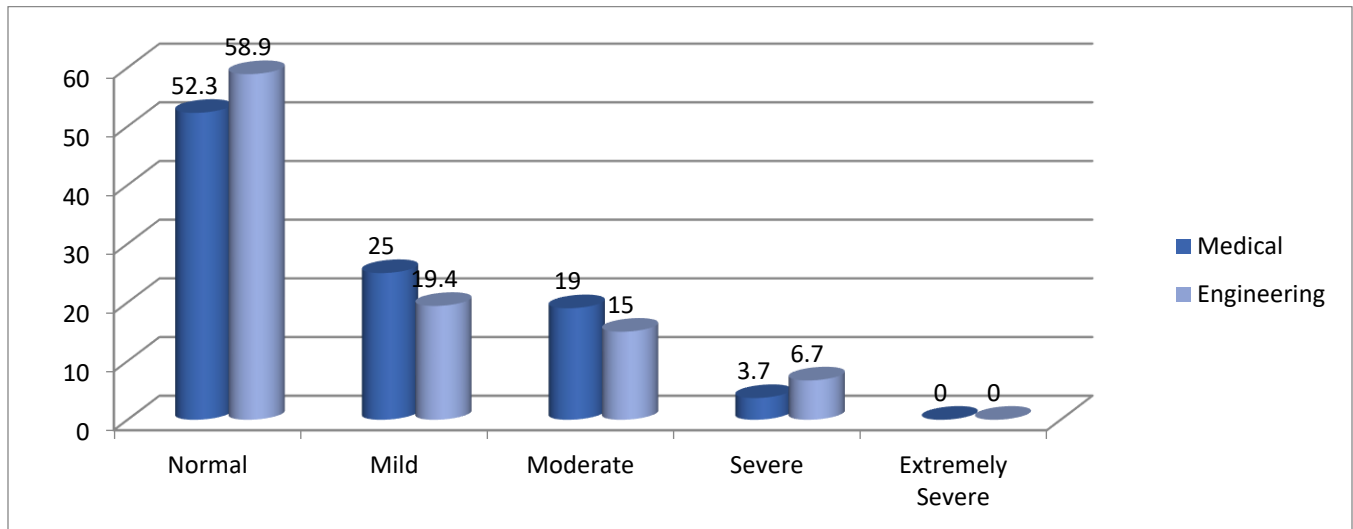

FIGURE 2 DIFFERENT GRADES OF ANXIETY AMONG MEDICAL AND ENGINEERING STUDENTS
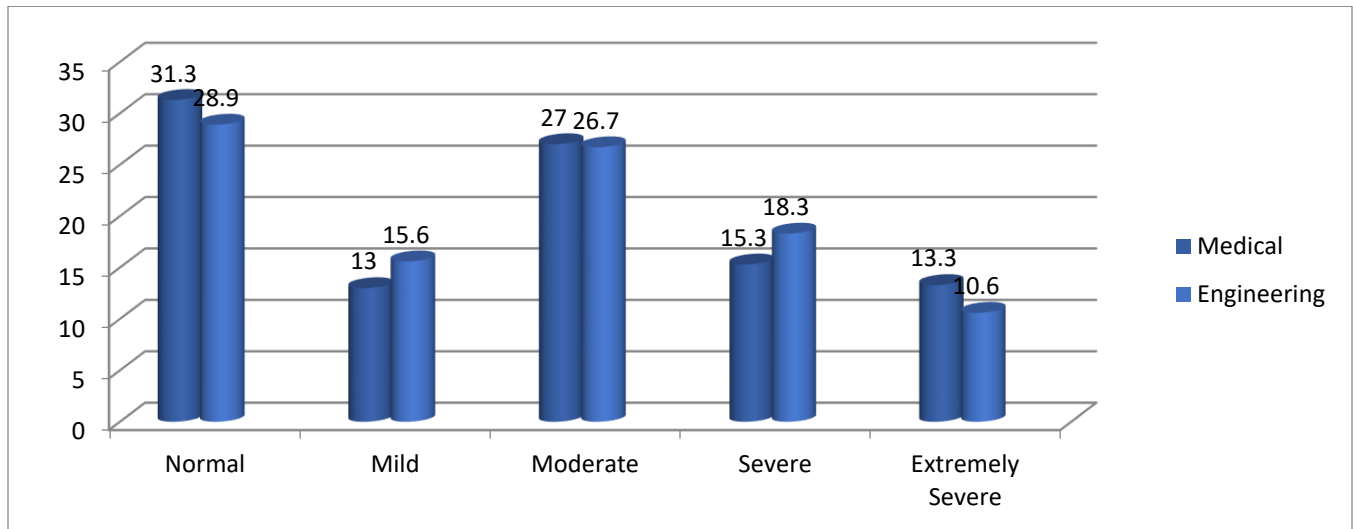

FIGURE 3 DIFFERENT GRADES OF DEPRESSION AMONG MEDICAL AND ENGINEERING STUDENTS