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Original Research Article

A study to explore patterns and factors of depression, anxiety and stress among students preparing for competitive exams in central India

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ABSTRACT

Background: Depression, stress and anxiety among students is being increasingly recognized as a major mental health problem. Depression is a common but grave mood disorder. Many chronic mood and anxiety disorders in adults begin as high levels of anxiety in children. Objectives of current study were to explore the level of depression, anxiety and stress and to identify various factors associated with it.
Methods: A descriptive, cross-sectional study on 400 students preparing for competitive exams, using a questionnaire having socio demographic profile and DASS 21 scale was carried out. Then data was entered in MS excel and SPSS Software was used for relevant inferential statistical tests of associations.
Results: 65.8 % of participants were less than 18 years of age and 57.3 % were males.20.3 % of students were found to be having moderate depression, 8.8 % having severe depression, 17.8 % having moderate anxiety, 27.3% having severe anxiety, 14.8 % having moderate stress, 12 % having severe stress. Stress was found to be significant in females and those having more than 2 siblings. Significant anxiety was found in those having non supportive teachers. Significant depression was found in those having non supportive teachers and parents, those who sleep for less than 6 hours and those spending less than 2 hours on study.
Conclusions: Study highlighted common factors leading to depression anxiety and stress among students. Parents and teacher are recommended to develop proper communication and be aware of this problem.

Keywords: Depression, Anxiety, Stress, Factors

INTRODUCTION

Depression is a common but grave mood disorder. Many chronic mood and anxiety disorders in adults begin as high levels of anxiety in children. Studies suggest that depression is caused by a blend of genetic, biological, environmental, and psychological factors.[1]

Depression among students is being progressively more recognized as a major mental health problem. The load of depression is found to be on the rise over the years due to greater recognition, awareness and media influence.[1-2] The WHO considers mental health as a fundamental aspect of human health and published an action plan for 2013–2020 to promote the prevention, treatment, and overcoming of mental health disorders.[3] Depression, anxiety, and stress levels are considered important indicators for mental health, and the inability to detect and address these psychological disorders negatively affects individuals.[4-5] According to the recent National Mental Health Survey carried out by NIMHANS, the prevalence of depression is estimated to be 1.5% and students who had suffered from depression any time in the past is estimated at 2.2%. Depression is more among male students and highest in the age group of 18 to 22 and among those in urban areas

(1.7%) than that compared to rural areas (1%).[2] It is the age of biological and physiological changes and hence there is greater vulnerability and susceptibility. Aspirants of competitive examination work hard, study for longer period. Students may also face challenges to their health, both physical and mental, that may have long-term effects. Anxiety disorders are the most common mental illness among scholars who are preparing for examination. Common symptoms for anxiety disorders are feelings of stress and apprehension, irritability, trouble concentrating, fearfulness, sweating and dizziness, shortness of breath, irregular heartbeat, headaches and frequent upset of stomach or diarrhea.

Depression among students of competitive examination is occasionally observed. Sometimes, it could lead to other symptoms or suicide. Depression is a common but serious illness that leaves candidates feeling despondent and helpless, completely detached from the world. Candidates may show symptoms like- feelings of sadness or unhappiness change in appetite or weight, slowed thinking or speech, loss of interest in activities or social gatherings, fatigue, feelings of guilt or anger over past failures.[6] Most of the studies on depression, anxiety, and stress have been conducted on adults, the but mental status of teenage students going for competitive exams are still unexplored. The purpose of our study was to explore the level of depression, anxiety and stress and to identify various factors associated with it.

METHODS

It was a descriptive cross-sectional study done in duration of 2 months i.e., August 2018 to September 2018 on Students preparing for various medical and engineering competitive exams at coaching institute in Jabalpur city. Line listing of 19 coaching institute in Jabalpur city was done and Out of total, 8 institutes were randomly selected. A total 400 students were selected from 8 coaching institute. 50 students were selected randomly from each institute. Students who are not giving exam in the coming next year and Students who has not given consent for the study were not included in the study. Minor students whose parents refuse to give permission for participating in study were also excluded from the study. Data was collected by using self -administered questionnaire containing DASS 21 scale, socio demographic variable (age, gender, father occupation, mother occupation etc.) and other factors (study hours, sleeping hours, likeliness of institute environment etc). The Data were coded and validated. Data entry and analysis were using EPI info (version 7) and MS Excel software. Generation of descriptive Statistics was done. Mann Whitney u test and Kruskal Wallis test was used to identify factor associated with depression, anxiety and stress. Ethical clearance was taken from the ethical committee of the Institution. The study was done according to world Helsinki declaration and informed consent was obtained from the participants before giving the questionnaire. Anonymity of participants was maintained by avoiding any information revealing the identity of the participants in the questionnaire.

RESULTS

The proportion of Depression, Anxiety and Stress among the students were 51.5%, 33.25% and 58.75% respectively as shown in (Figure 1).

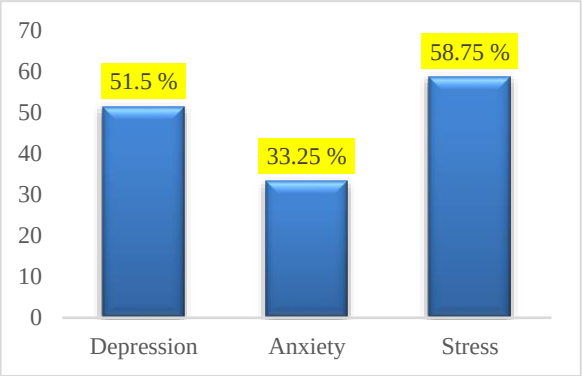

Figure 1: Proportion of depression, anxiety and stress in students.

Patterns of depression, anxiety stress was also assessed through DASS 21 scale. Student who had depression, 19.5 % of them belongs to mild depression, 20.3 % were in moderate depression while 8.8 % were severely depressed. Student who had anxiety, 21.8 % of them belongs to mild anxiety, 17.8% had moderate anxiety while 27.3 % had severe anxiety. Students who had stress, 19% were in mild stress, 14.8 % were in moderate stress while 7.5 % had severe stress as shown in (Figure 2).

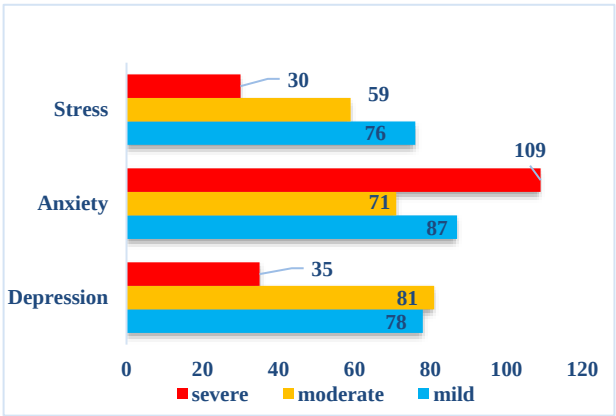

Figure 2: Pattern of depression, anxiety and stress in students.

The association between socio demographic variables and depression, anxiety, stress is depicted in (Table 2). Man Whitney U test was applied to find a statistically significant association. There were 65.75 % of students below 18 years of age. Students of age group less than 18 years had higher level of depression, anxiety and stress than students above than 18 years of age.

Table 1: Association tables between socio demographic variables and depression, stress, anxiety.

Variables	N (%)	Depression	Anxiety	Stress
Age group				
Less than 18	263 (65.75)	203.69	206.29	205.81
18 or more	137 (34.25)	194.37	189.38	190.31
P value for difference in mean rank		0.442	0.163	0.202
Gender				
Male	229 (57.25)	200.36	193.99	182.97
Female	171 (42.75)	199.52	208.02	222.70
P value for difference in mean rank		0.942	0.227	0.001*
Siblings				
1 sibling or less	311 (77.75)	194.79	195.18	194.32
2 or more siblings	89 (22.25)	220.44	219.09	222.11
P value for difference in mean rank		0.064	0.084	0.045*
Preparation field				
Medical entrance	153 (38.25)	209.46	193.88	203.71
Engineering entrance	247 (61.75)	194.95	204.60	198.51
P value for difference in mean rank		0.220	0.365	0.661
Kin members related to preparing field				
Yes	227 (56.75)	204.11	207.14	204.15
No	173 (43.25)	193.37	189.36	193.32
P value for difference in mean rank		0.354	0.125	0.351
Living status				
In own house	341 (85.25)	204.11	207.14	204.15
With relative/hostel/paying guest	59 (14.75)	193.37	189.36	193.32
P value for difference in mean rank		0.669	0.308	0.045
Preparing since				
Less than 2 years	306 (76.5)	197.62	198.24	202.37
More than two years	94 (23.5)	209.88	207.86	194.43
P value for difference in mean rank		0.366	0.479	0.559
Parents attitude				
Supportive	332 (83)	194.53	198.34	197.65
Neutral/ non supportive	68 (17)	229.64	211.07	214.43
P value for difference in mean rank		0.022*	0.406	0.274

*p<0.05 (statistically significant)

Depression was found to be higher in males as compared to those in females. Anxiety was found to be higher in females as compared to males. While high stress was found to be statistically significant in females. Depression and Anxiety was higher in students with 2 or more siblings While stress was significantly higher in participants with 2 or more siblings with p value of 0.045. Depression and stress was higher in students preparing for medical entrance while anxiety was higher in students preparing for engineering entrance exams. 56.25 % of the students had family members related to their preparation field. Depression, anxiety and stress were higher in those who had their family members related to their preparation field. 85.25 % of the students were found to be living in their own house, while 14.75 % of students were living with their relatives, in hostels or as paying guests. Stress was significantly higher in those living in their own house as compared to others while Depression and Anxiety and was found to be higher among them but was not found statistically significant.76.5 % of students were preparing for exams from less than 2 years. Depression and anxiety were found to be higher in those preparing from more than 2 years, while stress was higher in those preparing for less than 2 years. 83 % of the participants had supportive parents while 17 % had neutral or non-supportive parents. Depression, stress and anxiety was higher in those who have non supportive or neutral parents. Depression was found significantly higher among those who have non supportive or neutral parents.The association between various variables and depression, anxiety, stress by applying kruskal Wallis test is depicted in (Table 2). Depression and anxiety was significantly higher in students who did not get support from teaching faculty and stress was insignificantly higher in those who sometimes get support from teaching faculties. Parent's income shows no significant effect on Depression, stress and Anxiety of the students. Depression, stress and anxiety was higher in those who spend 2 or less hours on study as compared to those who spend more than 2 hours, moreover depression, anxiety and stress was lower in those who spend more than 6 hours on study. Depression, anxiety and stress was higher in those who sometimes studied with friends, as compared to those who always or never study with friends, while depression, anxiety and stress was quiet low in those who always studied with friends.

Table 2: Association tables between various factors and depression, stress, anxiety.

Variables	N (%)	Depression	Anxiety	Stress
Support from teaching faculty				
Not at all	11 (2.75)	241.09	225.86	223.95
Sometimes	97 (24.25)	236.61	230.61	226.07
Usually	110 (27.5)	196.14	188.18	199.38
Always	182 (45.5)	181.44	182.78	187.95
P value for difference in mean rank		0.001*	0.031*	0.072
Income of parents				
<50000	220 (55)	198.06	200.70	196.65
50000-100000	112 (28)	203.82	199.67	205.74
>100000	68 (17)	202.93	201.21	204.33
P value for difference in mean rank		0.895	0.995	0.758
Spend time on study (hours)				
0-2	34 (8.5)	225.53	235.43	215.97
2-4	139 (34.8)	219.65	210.30	210.88
4-6	136 (34)	193.02	192.06	201.17
>6	91 (22.8)	173.08	185.09	177.87
P value for difference in mean rank		0.011*	0.090	0.154
Study preference				
Alone	334 (83.5)	197.71	196.87	197.10
Sometimes with friends	62 (15.5)	215.27	218.77	220.02
Always with friends	4 (1)	139.67	160.83	109.50
P value for difference in mean rank		0.357	0.324	0.138

*p<0.05 (statistically significant).

Table 3: Association between ill effect and depression, anxiety and stress.

Variables	N (%)	Depression	Anxiety	Stress
Sleeping hours				
<6	69 (17.25)	217.05	209.65	215.73
≥6	331 (82.75)	186.88	193.05	199.66
P value for difference in mean rank		0.035*	.164	.151
Anorexia				
Present	91 (22.75)	203.36	208.0	221.70
Absent	309 (77.25)	199.52	199.18	182.97
P value for difference in mean rank		0.942	0.127	0.001*
Bulimia nervosa				
Present	8 (2)	197.79	219.09	212.11
Absent	392 (88)	220.44	192.89	194.32
P value for difference in mean rank		0.069	0.064	0.085
Refractive error				
Present	97 (24.25)	209.46	204.60	203.71
Absent	303 (75.75)	194.95	197.88	198.51
P value for difference in mean rank		0.120	0.465	0.661
Bowel upset				
Present	23 (5.75)	204.11	207.14	204.15
Absent	377 (94.25)	197.37	199.36	195.32
P value for difference in mean rank		0.554	0.425	0.351
Tiredness/fatigue				
Present	75 (18.75)	204.11	207.14	218.15
Absent	325 (81.25)	193.37	189.36	169.32
P value for difference in mean rank		0.354	0.125	0.031*

*p<0.05 (statistically significant).

The association between ill effect and depression, anxiety, stress is depicted in (Table 3). Man Whitney U test was applied to find a statistically significant association. Depression, anxiety, and stress were higher in students who sleep for less than 6 hours. Among these depressions was statistically significant. 22.5 % of student shows

symptoms of anorexia. Anorexia was statistically significant with increase in stress while it shows insignificantly increases in depression and anxiety. 2 % of the students shows symptoms of bulimia nervosa an eating disorder. There was increase in depression, anxiety and stress when compared with eating disorder but it was not significant. 24.5% of students with refractive error shows increases in depression, anxiety and stress but though the mean rank was found increased it was statistically insignificant. 5.75 % of students suffered from bowel upset had increased the means ranks in depression, anxiety and stress but it was found statistically insignificant. 18.75% of the of students were had experience tired and fatigue during study hours. When compared it with stress it was found statistically significant with p value of 0.031. while depression and anxiety were statistically insignificant.

DISCUSSION

In present study Depression, Anxiety and stress were relatively higher among the Students preparing for competitive exams. Many studies done in past shown a considerable higher amount of depression, anxiety and stress in the students. Findings of previous studies suggest there may be factors like low self-esteem, unhappy relationship with family, low support from teaching staff, serious financial constraint.[7-10] In present study the proportion of Depression anxiety and stress was higher as compare to the previous studies. Students of age group less than 18 years were found to be having higher depression, anxiety and stress than students above than 18 years of age. This is attributed to the fact that most of the students of the younger age group are school going students who have to manage their school workload and the competitive exam preparation simultaneously. Problems in school like peer pressure, pressure from school teachers and lack of support from the school teachers for competitive exam preparation, family problems like financial struggles, separated or divorced parents and various other types of traumatic events tend to affect the younger age more than the older age group. This was found in contrast to the study conducted by Shi M et al, which showed that students of older age group are have more depression than younger age group, due to financial burden and marriage pressures.[11]

Females are more vulnerable to stress may be due to various issues like hormonal changes during puberty, social causes like discrimination in society or family and ruminating when they are depressed. females also tend to emotionally mature more quickly than boys. Similar results were found in the study by Kumar KS. In his study the anxiety and stress were statistically significant in females.[7] Dhumale et al concerning gender found that stress was present in 27.7% of female respondents as compared to 20.4% of male respondents This association of stress with gender was statistically significant.[12] Abdulghani et al. in their study stated that higher scores of depression, anxiety and stress was associated with female gender, lower semester, younger age.[13] Stress was significantly higher in students with 2 or more siblings .it may be because of the fact that children with more siblings face greater expectations from their parents. They also face the burden of financial problems due to the greater number of family members. This is in contrast to the study conducted by Senthilvelou et al which showed that single children have higher level of anxiety and stress levels as compared to children with siblings, although these are not significant.[14]

Absence of supportive parents in students‘ life can lead to despair and depression in students. Such children can become rigid, show low stress tolerance, emotional instability, unstable relationships due to repeated conflicts and lack of emotional support from parents, thus these children develop into adults who struggle with their lives. Similar results were also found in the study conducted by Kamlesh singh et al which showed that poor family environment in terms of parental support, rejection, and inconsistencies can all contribute to psychological problems like anxiety, stress, neuroticism, depression and many others.[15] Stress was significantly higher in those living in their own house as compared to others. This may be due to the fact that they face direct pressure from their strict parents and there was lack of relaxation activities. This finding in present study is consistent to the study conducted by Shaikh BT et al which showed the same finding that day scholars are more stressed as compared to hostellers due to stress of travelling from campus to home.[16] In contradiction to present study, a study done in, Lahore Pakistan showed that the students living in dormitory have considerably higher amount of depression and anxiety as compared to students living with families.[17] Dhumale et al suggested that stress was present in 25.9 % students living in hostels, while among the students living elsewhere, 19.6% had stress; an association which was also statistically significant.[18]

Depression and Anxiety was higher in the students who never got support by faculty. It may be because of the respect they hold for faculty and often faculties handle these difficult situations themselves for them. It is because of the feeling of helplessness and hopelessness. Teachers compare those who perform well with those who underperform. So Fear of failure to do well in studies is causing anxiety among students which Has substantial negative effects on their academic and social success**.** Sumaya Basudan et al showed that Faculty members and administrators are a significant source of stress. Their findings revealed that this dissatisfaction leads to higher levels of stress, anxiety and depression. Faculty support has been associated with significantly lower stress levels.[19] Al-Mohaimeed AA et.al showed that higher students ‘social support is, the lower their symptoms of stress. Furthermore, when peers act as mentors, stress and anxiety are significantly reduced.[20] Abdallah et al showed that lack of communication with teaching staff was significantly associated with stress.[21]

Depression was significantly (p value 0.011) while stress and anxiety were insignificantly higher in those who spent

2 or less hours on study as compare to those more than 2 hours, moreover depression anxiety and stress were lower in those who spent more than 6 hours on study. Present study was in line with a study done by Ayat R. Abdallah and Hala M. Gabr showing students who spent Less or equal to four hours on study were found to be having significant anxiety and stress as compared to those who spent more than 4 hours. Several factors may underlie these findings. Students who spend more time on studies tend to complete their academic syllabus on time and get more time and opportunities to revise the syllabus. Those spending less time on studies tend to get panic during examination periods due incomplete syllabus, their confidence is lowered, thus leading to depression, anxiety and stress symptoms.[21] In contradiction to present study, Susan Bahrami et al on MSc and PhD students showed that relation between study and depression was negative and significant. This means that their amount of depression decreased with increasing amount of studying.[22]

The students who had reduced sleep showed more depression, anxiety and stress as compared to other students. Reduced sleep can cause various types of mental issues. It can also lead to irritation, lack of concentration, poor academic performance, and various other serious cardiovascular diseases can also occur, Similarly Siu Yi Wong et al suggests that Sleep problems precede an episode of depression in 40% of cases. Individuals with persistent sleep problems may be at significantly higher risk of developing depression.[23] Present study was also in line with a study done by Pensuksan et al suggests that students classified as poor-quality sleepers had the high prevalence of depression about 45.5%. poor quality sleepers reported moderate depression (26.7%), moderate anxiety (29.3%) and moderate stress (22.9%). Female students who had poor sleep quality reported a higher prevalence of moderate anxiety (31.9%), higher than their male counterparts.[24]

CONCLUSION

The propensity of mental health issues hinders the success of the students. Such issues also have an adverse effect on the social functioning and ability to react and deal with stressful situations. Coaching Faculties should pay attention to student stress in learning and design general curriculum on stress coping strategies like workshops. Students must also learn to manage the study hours without compromising their recreational activities and their sleeping hours, since reduced sleeping hours are associated with higher levels of depression as also evident from our study.

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