

## ORIGINAL ARTICLE

# Relationship between Self-reported Emotional and Behavioral Difficulties with Depression, Anxiety, and Stress among Pre-University College Students

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## ABSTRACT

**Background:** During the phase of growth and development, individuals experience changes in their thoughts and emotions which manifest as behavioral disorders. Many research has shown that majority of adults who suffer mental disorders indicate that their symptoms began in childhood and adolescence. If these symptoms are tackled earlier, the adolescent students are able to emerge as healthy adult citizens of the nation. With this context, this study was conducted to estimate the prevalence of self-reported emotional and behavioral difficulties, depression, anxiety, and stress and also to find out the relationship between them among pre-university college (PUC) students of Mysuru, Karnataka. **Methods:** A community-based cross-sectional study done for a period of 3 months. All the students who were studying in the 1<sup>st</sup> and 2<sup>nd</sup> year PUC were included in the study. Data related to sociodemographic profile, depression, anxiety, and stress were collected through preformed pre-tested questionnaire, strengths, and difficulties questionnaire and depression anxiety stress scale-21 questionnaire. Results were expressed as relevant and statistically significant association was considered at  $P < 0.05$ . **Results:** Among 218 study participants, 55% were aged 17 years and majority were male (90.8%). The prevalence of self-reported emotional and behavioral difficulties was 33%. Depression was noted among 76% of the study participants, anxiety, and stress among 52.8% and 40%, respectively. Even though there is no significance noted between self-reported emotional and behavioral difficulties with depression, anxiety, and stress, it was observed that 68.3% who had depression, 72.2% who had anxiety, and 70.8% who had stress also had emotional and behavioral symptoms.

**Key words:** Anxiety, depression, emotional, and behavioral difficulties, stress

## INTRODUCTION

During the transition from school life to college, students undergo many psychosocial changes which make them more prone to develop mental health issues. Individuals experience changes in their thoughts and emotions which manifest as behavioral disorder. Depression and anxiety are commonly recognized as serious disorders affecting the student population to a large.

At any given point of time, 25% of students report symptoms of depression.<sup>[1]</sup> Lifetime prevalence of depression and anxiety increases from 1% of the population under age 12 years to ~17–25% of the population by the end of adolescence.

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The greatest increase in new cases occurs between 15 and 18 years. Indian empirical studies have reported a prevalence of psychiatric morbidity in the range between 14.4% and 31.7%; thus, affecting psychosocial functioning.<sup>[2]</sup> As the academic performance plays a decisive role in higher education and career, academic-related events are believed to be major stressors among the adolescent, especially in Asian countries. Students begin to face the pressure of competition

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from the preprimary level itself which further increases at the pre-university level as getting admission to good colleges depend on their grades or marks obtained in the qualifying examination.<sup>[3]</sup> This overburden academic workload results in stress among the students. In both developed and developing countries, adolescent mental health is a matter of concern as many psychological changes take place. Many studies show that psychosocial, psychological, and mental health issues among students are amenable to intervention if identified early.

### Objectives

The objectives of the study were as follows:

- To estimate the prevalence of self-reported emotional and behavioral difficulties among pre-university students
- To estimate the prevalence of depression, anxiety, and stress among pre-university students
- To find out the relationship between self-reported emotional and behavioral difficulties with depression, anxiety, and stress among pre-university students.

### METHODS

A community-based cross-sectional study was conducted for a period of 3 months among pre-university college (PUC) students of Mysuru, Karnataka. Sample size was calculated using the prevalence of self-reported mental health problems as 10.5% in developing countries,<sup>[4]</sup> 95% confidence level and 5% relative precision and 10% non-response rate, minimum sample size to be studied was calculated using sample size formula of single proportion to be 165.

### Sampling Technique

After line listing of all the college in Mysuru, one college was selected by simple random sampling (lottery) method and students were selected by universal sampling method from that college.

### Inclusion and exclusion criteria

All the students who were studying in the 1<sup>st</sup> and 2<sup>nd</sup> year PUC who gave assent were included as study participants. All those who were absent on the day of data collection and who were not willing to participate were excluded from the study. After obtaining the clearance from the Ethics Committee of the Institute and consent from the college heads, data were collected.

### Study tools

Data related to sociodemographic profile, depression, anxiety, and stress were collected through preformed pretested questionnaire, strengths, and difficulties questionnaire and depression anxiety stress scale-21 questionnaire.

### Statistical Analysis

Data thus obtained were entered into Microsoft Excel and analyzed using SPSS V 24 (Licensed to JSS AHER). Descriptive statistics such as percentage, mean, and standard deviation are applied. An inferential statistical test like Chi-square test was applied to find out association and statistically significant association was considered at  $P < 0.05$ .

### RESULTS

Among 218 study participants, 55% were aged 17 years and majority were male (90.8%). About 54.1% were studying 1<sup>st</sup> PUC and 74.8% were satisfied with current education. Majority of the parents were literate, 84.4% had one or more siblings, 72.9% were living in nuclear family, and 72.5% had up to 5 family members. About 81.7% of the study participants come from their home whereas rest (18.3%) comes either from relative's home/hostel/paying guest. About 41.7% of them belong to Class 4 socioeconomic status according to modified B G Prasad classification [Table 1].

The prevalence of self-reported emotional and behavioral difficulties was reported to be 33%. Self-reported borderline emotional symptoms, conduct problems, hyperactivity, peer problems, and pro-social problems were seen in 20%, 42%, 16%, 57%, and 5% of the study participants, respectively [Graphs 1 and 2].

Depression was noted among 76% of the study participants, among which 23.4% had mild depression, 32.6% had moderate depression, 11.9% had severe depression, and 8.7% had extremely severe depression [Graphs 3 and 4].

The prevalence of anxiety in our study was seen among 52.8% of the study participants. Among them, majority (22.5%) were having moderate anxiety followed by mild (12.8%) anxiety [Graphs 5 and 6].

About 40% of the study participants were having stress of which 20.2% were having mild stress followed by moderate (12.4%) stress and severe (8.3%) stress [Graphs 7 and 8].

Statistical significant association was noted with between education qualification of students and self-reported emotional and behavioral difficulties at  $P = 0.044$ . Although there was no statistical association between current residence with self-reported emotional and behavioral difficulties, it was noted that 80% of the participants who were coming either from relative's home/hostel/paying guest reported emotional and behavioral difficulties [Table 2].

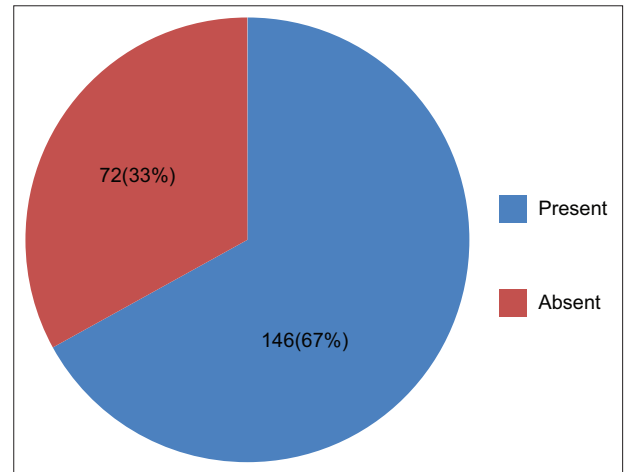
Age, education status of the students, and satisfaction with current education and current residence showed statistical significant association with anxiety at  $P < 0.05$ . Mother's education qualification showed significant association with stress at  $P = 0.022$  [Table 2].

**Table 1:** Distribution of students according to sociodemographic profile

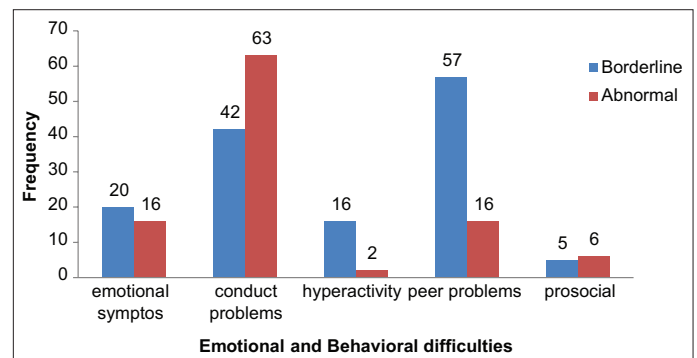
Sociodemographic profile	Frequency	Percentage
Age		
16	98	45.0
17	120	55.0
Sex		
Male	198	90.8
Female	20	9.2
Religion		
Hindu	216	99.1
Muslim	2	0.9
Education		
1 <sup>st</sup> PUC	118	54.1
2 <sup>nd</sup> PUC	100	45.9
Satisfaction with current education		
Yes	163	74.8
No/do not know	55	25.2
Mothers education		
Non-literate	47	21.6
Literate	171	78.4
Fathers education		
Non-literate	51	23.4
Literate	167	76.6
Siblings		
Yes	184	84.4
No	34	15.6
Type of family		
Nuclear	159	72.9
Joint/three generation	59	27.1
Total family members		
Up to 5	158	72.5
More than 5	60	27.5
Current residence		
Parents home	178	81.7
Others	40	18.3
Socioeconomic status (modified B G Prasad)		
Class 1	2	1
Class 2	26	11.9
Class 3	65	29.8
Class 4	91	41.7
Class 5	34	15.6

PUC: Pre-university college

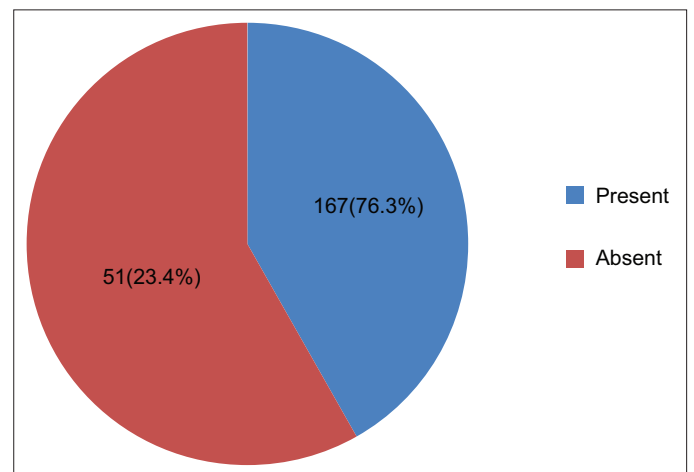
Even though there is no significance noted between self-reported emotional and behavioral difficulties with depression, anxiety, and stress, it was observed that 68.3% who had depression, 72.2% who had anxiety, and 70.8% who had stress also had emotional and behavioral symptoms [Table 3].



**Graph 1:** Distribution of students according to the prevalence of self-reported emotional and behavioral difficulties



**Graph 2:** Distribution of students according to the prevalence of self-reported emotional and behavioral difficulties



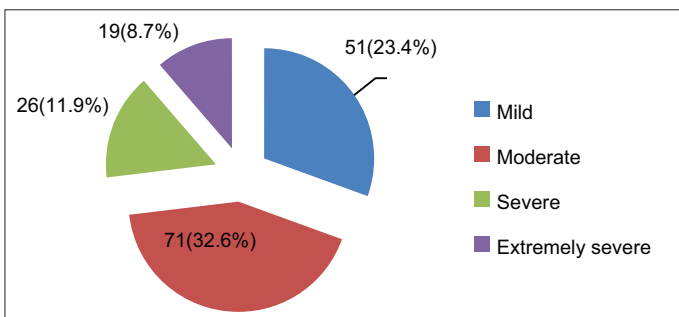
**Graph 3:** Distribution of students according to the prevalence of depression

## DISCUSSION

A community-based cross-sectional study was conducted among PUC students of Mysuru, Karnataka, for a period of 3 months. Among the study participants, 55% were aged 17 years and majority were male (90.8%). About 54.1% were studying 1<sup>st</sup> PUC.

**Table 2:** Distribution of students based on association of sociodemographic profile with self-reported emotional and behavioral difficulties and depression, anxiety, and stress

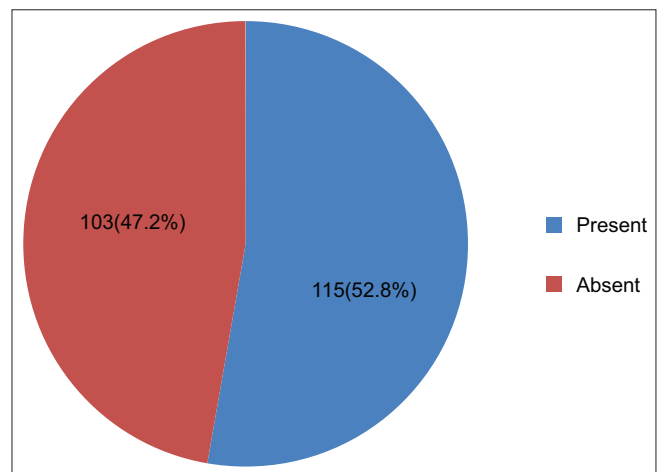
Sociodemographic profile	Emotional and behavioral difficulties			Chi-square	P-value
	Absent (%)	Present (%)	Total (%)		
Education					
1 <sup>st</sup> PUC	32 (27.1)	86 (72.9)	118 (100.0)	4.060	0.044
2 <sup>nd</sup> PUC	40 (40.0)	60 (60.0)	100 (100.0)		
Current residence					
Other	8 (20.0)	32 (80.0)	40 (100.0)	3.759	0.05
Parents home	64 (36.0)	114 (64.0)	178 (100.0)		
Sociodemographic profile	Anxiety			Chi-square	P-value
Age					
16	35 (35.7)	63 (64.3)	98 (100.0)	9.502	0.002
17	68 (56.7)	52 (43.3)	120 (100.0)		
Education					
1 <sup>st</sup> PUC	43 (36.4)	75 (63.6)	118 (100.0)	12.054	0.001
2 <sup>nd</sup> PUC	60 (60.0)	40 (40.0)	100 (100.0)		
Satisfaction with current education					
No/do not know	19 (34.5)	36 (65.5)	55 (100.0)	4.762	0.029
Yes	84 (51.5)	79 (48.5)	163 (100.0)		
Current residence					
Other	12 (30.0)	28 (70.0)	40 (100.0)	5.847	0.016
Parents home	91 (51.1)	87 (48.9)	178 (100.0)		
Sociodemographic profile	Stress			Chi-square	P-value
Mothers education					
Illiterate	21 (44.7)	26 (55.3)	47 (100.0)	5.210	0.022
Literate	108 (63.2)	63 (36.8)	171 (100.0)		



**Graph 4:** Distribution of students according to the prevalence of depression

In our study, 74.8% were satisfied with current education/branch in which they are studying. Majority of the parents were literate, 84.4% of the participants had one or more siblings, 72.9% were living in nuclear family, and 72.5% had up to 5 family members. About 81.7% of the study participants come from their home whereas rest (18.3%) comes either from relative’s home/hostel/paying guest. About 41.7% of them belong to Class 4 socioeconomic status according to modified B G Prasad classification.

The prevalence of self-reported emotional and behavioral difficulties was reported to be 33% in our study whereas



**Graph 5:** Distribution of students according to the prevalence of anxiety

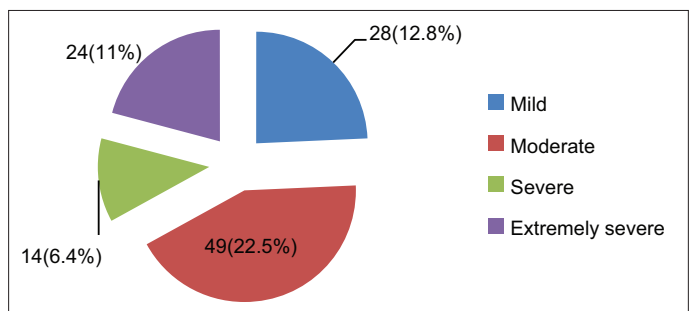
22.43% of children had an abnormal score on at least one domain of SDQ in a study conducted by Bele *et al.*<sup>[5]</sup> A contrast result was observed in a study by Bhola *et al.*,<sup>[6]</sup> where only 10.1% of adolescents had total difficulty levels in the abnormal range. The reason for disparity in the results could be due to the consideration of higher percentile distribution compared to original cutoffs in Bhola *et al.* study. Study

conducted in Iran and Brazil reported that the prevalence of a total abnormal SDQ score was 20% and 18%, respectively.<sup>[7,8]</sup>

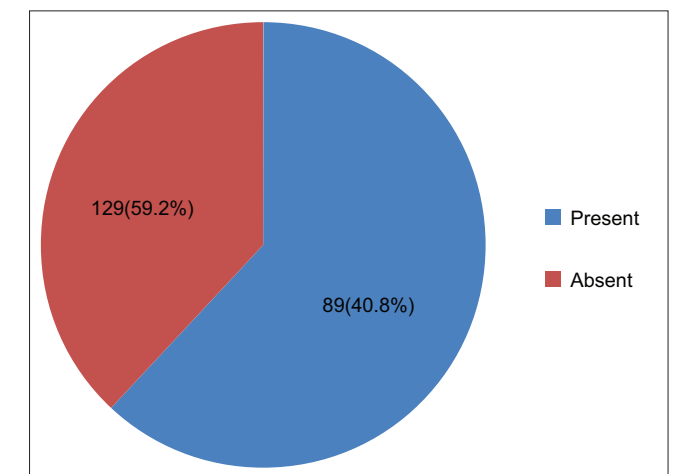
In this present study, self-reported borderline emotional symptoms, conduct problems, hyperactivity, peer problems, and pro-social problems were seen in 20%, 42%, 16%, 57%, and 5% of the study participants, respectively.

**Table 3:** Distribution of students based on association of and depression, anxiety, and stress and self-reported emotional and behavioral difficulties

Variables	Emotional and behavioral difficulties			Chi-square value	P-value
	Absent (%)	Present (%)	Total (%)		
Depression					
No	19 (37.3)	32 (62.7)	51 (100.0)	0.538	0.463
Yes	53 (31.7)	114 (68.3)	167 (100.0)		
Anxiety					
No	40 (38.8)	63 (61.2)	103 (100.0)	2.977	0.084
Yes	32 (27.8)	83 (72.2)	115 (100.0)		
Stress					
No	46 (35.7)	83 (64.3)	129 (100.0)	0.989	0.320
Yes	26 (29.2)	63 (70.8)	89 (100.0)		



**Graph 6:** Distribution of students according to the prevalence of anxiety



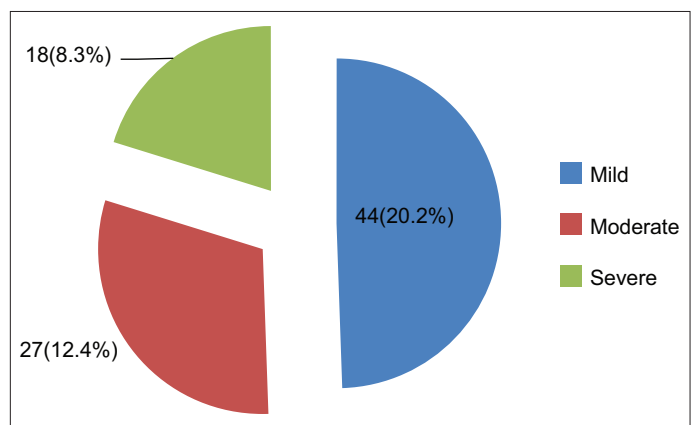
**Graph 7:** Distribution of students according to the prevalence of stress

Depression was noted among 76% of the study participants in our study, among which 23.4% had mild depression, 32.6% had moderate depression, 11.9% had severe depression, and 8.7% had extremely severe depression. Our results are in par with the study done in Tamil Nadu where depression was noted in 73.6% and extremely severe depression in 4.2%.<sup>[9]</sup> Overall prevalence of depression in a study by Singh *et al.* and Sandal *et al.* was 59.2% and 65.53%, respectively.<sup>[1,10]</sup>

The prevalence of anxiety in Singh *et al.* study was 86.5% and severe and extremely severe anxiety together made 43.4%.<sup>[1]</sup> Similar result was found in Daya and Karthikeyan study where the prevalence was 86.5% and 35.5% were suffering from extremely severe anxiety.<sup>[9]</sup> Whereas lower prevalence of anxiety (52.8%) was seen in our study, among which majority (22.5%) were having moderate anxiety followed by mild (12.8%) anxiety.

About 40% of the study participants were having stress of which 20.2% were having mild stress followed by moderate (12.4%) stress and severe (8.3%) stress. The prevalence of stress was noted among 52.7% and 47.02% in Singh *et al.* and Sandal *et al.* study which is in par with our study.<sup>[1,10]</sup> Low prevalence of stress (24.7%) was seen in Daya and Karthikeyan study and 0.5% were suffering from extremely severe stress whereas in our study, none were suffering from extremely severe stress.<sup>[9]</sup>

Statistical significant association was noted with between education qualification of students and self-reported emotional and behavioral difficulties at  $P = 0.044$ . Although there was no statistical association between current residence with self-reported emotional and behavioral difficulties, it was noted that 80% of the participants who were coming either from relative's home/hostel/paying guest reported emotional and behavioral difficulties. Age, education status of the students, and satisfaction with current education and current residence showed statistical significant association with anxiety at  $P < 0.05$ . Mother's education qualification showed significant association with stress at  $P = 0.022$ .



**Graph 8:** Distribution of students according to the prevalence of stress



## CONCLUSION

The present study indicated high prevalence of emotional and behavioral difficulties, of these conduct problems (48.2%) followed by peer problems (33.4%) were more prevalent. This study also shows high prevalence of depression, anxiety, and stress. Of the individual disorders, depression was the most prevalent (76.3%), followed by anxiety (52.8%), then stress (40.8%). Even though there is no significant noted between emotional and behavioral difficulties with depression, anxiety, and stress, it was observed that 68.3% who had depression, 72.2% who had anxiety, and 70.8% who had stress also had emotional and behavioral symptoms.

## RECOMMENDATIONS

Educational institutions need to identify the students who are at risk and refer them for counseling and treatment. By this means of early identification and immediate treatment of mental disorders, students can overcome the consequences such as suicidal behavior, substance abuse, and poor academic performance.

## LIMITATIONS

Due to less number of female participants, results cannot be generalized to adolescent females.

## CONFLICTS OF INTEREST

None.

## FUNDING AGENCY

None.

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