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Original Research Article

Prevalence of anxiety and depression among students appearing for NEET examination in a rural and urban area of Tamil Nadu: a cross sectional analytical study

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ABSTRACT

Background: Mental health problems can reduce the quality of student's life by affecting their academic achievement and physical health. Higher education being a prerequisite for a successful future, the NEET exams have been the source of stress and anxiety for several students. The aim of the study was to determine the prevalence of anxiety and depression among students facing NEET exams and their associated factors.
Methods: This was a cross-sectional analytical study design. The sample size is 150 (75 each in rural and urban area). Results are presented as proportion and Chi-square test was done to assess the association of the factors to adherence.
Results: Among the 150 students, the prevalence of anxiety among urban students was 40% whereas the prevalence of anxiety among rural students was 60% and the prevalence of depression among urban students was 45.3% whereas the prevalence of depression among rural students was 56%. There was statistical association between gender, school issues, family issues, socio-economic status, and anxiety and depression.
Conclusions: More than one-third of the students had anxiety and more than half of the participants had depression. The mental health status of the students should be taken into consideration by the teachers, students, and the government while the students appear for the NEET examination.

Keywords: Adolescents, Anxiety, Depression, NEET examination

INTRODUCTION

Mental health problems can reduce the quality of student's life by affecting their academic achievement and physical health.[1] These issues can also have long-term consequences for students, affecting their future employment, earning potential, and overall health. High school students are increasingly vulnerable to social and psychological disturbances, due to developmental and academic requirements.[2]

Due to guaranteed white collar job prospects, medicine, engineering, and management have been the most preferred choice of higher education by the students and/or their parents. Thus, higher education being a prerequisite for successful future, the exams have been the source of stress and anxiety for several students. In addition to the struggle to meet their own set values, today's students also have to satisfy the demand of their parents and the society, which adds further anxiety, depression and suicidal tendencies.[3]

In the domain of education, high level of anxiety is often experienced by students during performance related activities such as, exams.[4] The educational standards of school children in India are primarily evaluated based on written examinations.[5] The National eligibility cum entrance test (NEET) for undergraduate students is a highly competitive examination conducted by the National Testing Agency for admission to medical schools in India.[6]

Students may feel stressed, and as a result distressed, by their own high academic expectations.[7] Stress can cause or influence the course of both psychological conditions such as depression and anxiety and medical problems such as high blood pressure, poor wound healing etc. It is stated that anxiety is a psychophysiological signal that the stress response has been initiated.[8]

Globally, suicide has been recognized as a severe public health concern associated with significant disability, psychosocial impairment, and medical illness.[9] Sometimes, anxiety can have extreme consequences such as tendency to attempt suicide. Unfortunately, India has one of the highest teenage suicide rates in the world and the number of students attempting suicide because of exam fear and pressure is increasing.[10]

Particularly, Tamil Nadu tops the list not only with highest suicide rates (according to the National Crime Record Bureau, 2013), but also with the suicides reported due to exam failure. It should be noted that suicide is an extreme manifestation of distress, suggesting that, for every reported suicide, it is likely that many mental illnesses go undiagnosed.[3] The NEET exam has been recently introduced in Tamil Nadu and students are facing the pressure to take the examination. There are very few studies to explore the mental health issues students face related to this exam.

The aim of the study was to determine the prevalence of anxiety and depression among students facing NEET exams and their associated factors.

METHODS

Study design

We used cross sectional analytical study design.

Study setting

The study was conducted in Government Higher secondary school in Minjur (rural) and matriculation school Adambakkam (Urban) areas

Study population and study duration

We included students appearing for NEET exams for the first time and students who were appearing the NEET exam for the second time. Those who were diagnosed with any chronic diseases were excluded. The total duration of the study was from September 2018 to November 2018 (3 months).

Sampling technique

Simple random sampling technique was used. Line listing of the school students who are appearing for NEET exams for the first time was collected from the school.

Sample size

Assuming an alpha error of 5%, Confidence interval (CI) of 95%, absolute precision 8% and the expected proportion as 40% the sample size was calculated as 145 using an online software Open Epi version 3.01 (AG Dean, KM Sullivian and MM Soe). We enrolled 150 participants, 75 each in urban and rural setting.

Data variables, sources of data, and collection methods

We collected the data using a pretested, semi-structured questionnaire which included sociodemographic and life events. The Hamilton anxiety and Hamilton depression rating scale was used to assess the anxiety and depression and a life event scale was used to assess the behavioural changes in the school student. Moderate to severe grade of anxiety and depression were considered as anxious and depressed.

Data entry and analysis

The data was collected by a face-to-face interview using questionnaire and entered in Microsoft excel sheet. The analysis was done using SPSS Version 21.0 (Armonk, NY: IBM Corp).[10] Categorical variables were expressed as frequency and proportions. Anxiety and depression were expressed as proportion. The association of sociodemographic and life events association with anxiety and depression was assessed using Chi-square test presented with p value, $p<0.05$ was considered as statistically significant.

RESULTS

Among 150 participants 36 were male students and 39 were female students in urban population and 43 were male students and 32 were female students in rural population. More than half (54) of the participants were from joint family and more one third (43) participants belonged to the upper class. The prevalence of anxiety among urban students was 40% whereas the prevalence of anxiety among rural students was 60% and the prevalence of depression among urban students was 45.3% whereas the prevalence of depression among rural students was 56%.

The prevalence of anxiety among females is high in the rural area and there is a statistically significant association between gender and anxiety (Table 1). There is an association between socio-economic status and this association is significant with a p value 0.003. The students from urban area had a higher prevalence of anxiety (68%) related to school related issues and students from rural area had a higher prevalence of anxiety (66%) due to family related issues. Also, there was a statistically significant association between school related issues, family related issues and anxiety (Table 1). Females from rural area have higher prevalence (42.7%) of depression compared to males. There was a statistically significant association between gender and depression with a p value 0.0267. The

lower-class students from rural area have higher prevalence of depression compared to other classes and the association is statistically significant with a p value of 0.002 (Table 2). Urban students have higher prevalence (74%) of school related issues and rural students have higher prevalence (80%) of family related issues. Also, there was significant association between depression and school related issues and family related issues among students with a p value 0.048 and 0.012 respectively (Table 2).

Table 1: Sociodemographic factors and life events associated with anxiety among students appearing for NEET examination in Tamil Nadu, 2018 (N=150).

Variables		Anxiety		P value
		Urban	Rural	
Gender	Male	14 (18.6)	19 (25.3)	0.045
	Female	16 (21.3)	26 (34.7)	
Type of family	Nuclear	6 (8.0)	10 (13.3)	0.612
	Joint	10 (13.3)	15 (20)	
Socio-economic status	Upper class	20 (26.7)	4 (5.3)	0.003
	Upper middle class	4 (5.3)	7 (9.3)	
	Middle	4 (5.3)	7 (9.3)	
	Lower middle	3 (4.0)	7 (9.3)	
	Lower	0 (0)	13 (17.3)	
Family history of psychiatric illness	Yes	7 (9.3)	2 (2.7)	0.321
	No	24 (32)	43 (57.3)	
In relation to an acute illness or injury	Yes	26 (34)	24 (32)	0.876
	No	49 (66)	51 (68)	
School related issues	Yes	51 (68)	26 (35)	0.036
	No	24 (32)	49 (65)	
Family related issues	Yes	35 (47)	50 (66)	0.0024
	No	40 (53)	25 (34)	

Note: p value<0.05 significant.

Table 2: Socio-demographic factors and life events associated with depression among students appearing for NEET examination in Tamil Nadu, 2018 (N=150).

Variables		Depression		P value
		Urban	Rural	
Gender	Male	12 (16)	13 (17.3)	0.026
	Female	18 (24)	32 (42.7)	
Type of family	Nuclear	21 (28)	14 (18.7)	0.645
	Joint	9 (12.0)	21 (28)	
Socio-economic status	Upper class	10 (13.3)	3 (4.0)	0.002
	Upper middle class	9 (12.0)	4 (5.3)	
	Middle	6 (8.0)	5 (6.7)	
	Lower middle	5 (6.7)	8 (10.7)	
	Lower	0 (0)	15 (20)	
Family history of psychiatric illness	Yes	10 (13.3)	3 (4.0)	0.392
	No	21 (28)	42 (56)	
In relation to an acute illness or injury	Yes	38 (50)	30 (40)	0.64
	No	38 (50)	45 (60)	
School related issues	Yes	56 (74)	29 (39)	0.048
	No	19 (26)	46 (61)	
Family related issues	Yes	53 (71)	60 (80)	0.012
	No	22 (29)	15 (20)	

DISCUSSION

Exam anxiety is experienced by almost every student before board exams. While mild anxiety is considered to be good for students to keep them task oriented, excess anxiety has been associated with poor performance.[3]

This cross-sectional analytical study was conducted among students who were going to appear for the NEET exam to identify the proportion of anxiety and depression among them to revitalize the existing education system. Among the 150 participants the prevalence of anxiety among urban students was 40% whereas the prevalence of anxiety

among rural students was 60% and the prevalence of depression among urban students was 45.3% whereas the prevalence of depression among rural students was 56%. These findings are similar with studies done in Tamil Nadu, and Pakistan.[3,7] Studies done in China and Manipur shows the prevalence of anxiety lower than our study and this might be due the difference in the study settings and the difference in the education system.[8,11] Urban students have higher prevalence (74%) of school related issues and rural students have higher prevalence (80%) of family related issues. This is consistent with a studies done in Tamil Nadu.[3] This might be due to the pressure schools in urban area put on the students to show better results and also might be due the prevailing mind set of the society in rural areas that equates higher education with social status and economic progression. Also, parents might put pressure on the children to excel in the exams.

Similarly, the students belonging to lower socio-economic class have higher prevalence of depression. This shows that education is viewed as a tool for successful future and economic growth, highly competitive exams like NEET subjects' students to anxiety and depression. The students are put under tremendous pressure to secure good rank in the NEET examination and this has led to development of mental health issues like anxiety and depression. This might also lead to suicidal tendencies. India has high suicide rate and Tamil Nadu stands second in the number of suicides.[9] Government should take students mental health into consideration while formulating new policies.

The strengths of the study are that we adhered to the (STROBE) Strengthening the reporting of observational studies in epidemiology guidelines. We used a validated Hamilton scale to measure anxiety and depression. We used software such as Open Epi and SPSS for sample size calculation and data analysis. The limitations are the size and homogeneity of the sample population and also possible social desirability bias. This study can be used as a pilot project for future larger community and school-based studies to assess psychiatric morbidity and to make some policy changes. Policy making decisions in the education system has to be taken by considering the rural students. Special training has to be given to the teachers for counselling the competitive exam going students in rural as well as urban areas.

CONCLUSION

The prevalence of anxiety among urban students was 40% whereas the prevalence of anxiety among rural students was 60% and the prevalence of depression among urban students was 45.3% whereas the prevalence of depression among rural students was 56%. Also, the family issues and socio-economic status has a significant association with anxiety and depression. Parents and teachers should avoid putting pressure on the students and schools should take measures to provide the students with necessary counselling services. Government should take into account the mental health of the students before making any policy changes.

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