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The prevalence of depression, anxiety, and stress among high school adolescent's children in public and private schools in Rangareddy district Telangana state: A cross-sectional study

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Abstract:

BACKGROUND: The depression, anxiety, and stress is a major educational problem among students all around the world. The purposes of this study were to determine the depression, anxiety, and stress among the high school adolescent children in public and private schools in Rangareddy district, Telangana state.

MATERIALS AND METHODS: The present study was a cross-sectional study. The study sample considered 120 children from private schools and 259 children from public schools were studied. The study tool used was a questionnaire containing DASS (Depression, Anxiety, and Stress scale and sociodemographic characteristics). The data were expressed as proportion and mean values (Analysis of variance, independent *t*-test, and Pearson correlation) spatially tests were used at a significance level of $P < 0.05$).

RESULTS: The overall prevalence of depression in children from the public school was found to be only 5%, that of anxiety was 20.8%, and that of stress was 15.8%; the overall prevalence of depression in children from private schools was found to be 1.9%, that of anxiety was 20.5%, and that of stress was 20.1%.

CONCLUSION: In both schools, anxiety and stress were found to be more among study participants. Depression was observed to be less. But if they have more anxiety and stress and if not taken proper care at this point of time, it might get converted into a state of Depression.

Keywords:

Anxiety, comparative study, depression, high schoolchildren, stress

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Introduction

Adolescents and young adolescents' academic stress emerge as a significant mental problem in recent years. Depression is a common psychiatric disorder that presents with depressed mood, loss of interest or pleasure, feeling of guilt or low-self-worth, disturbed sleep or appetite, low

energy and poor concentration.^[1] Anxiety is defined as an emotional reaction or state of stress that occurs before examinations and continues through the examination period.^[2] Stress is the nonspecific response of the body to any demand. Stress is the most often as an over physical reaction or defensive outbursts, rocking and self-comforting

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behaviors, headache, and stomach ache, nervous fine motor behaviors. [Hair twirling or pulling, chewing and sucking biting of skin and finger nails, toileting accidents and sleep disturbances].^[3] The symptoms of these three disorders can lead to poor academic performance, low mood, interest is lost of communication with friends and family members, substances abuse, feeling of abandonment, homicidal ideation, and suicidal tendency sadness feeling.^[4-6]

The prevalence rates of anxiety disorders in community samples, based on clinical interviews (child and parent interviews respectively) vary between 21% and 29%, 10.5% and 16.5%, 9.7% and 10.8%, and 3.9% and 9.9%.^[7]

In epidemiological studies, the sex ratio is approximately 2/3 females endorsed significantly high levels of anxiety than males from Grade 1 through 12 and in college.

Scant literature is available on the prevalence of depression, anxiety, and stress in adolescents studying 8th, 9th, and 10th class, and none were available for Rangareddy district.

Hence, the present study was carried to assess depression, anxiety, and stress among schoolgoing children in public and private schools and to impact health education to improve their mental disorders.

Materials and Methods

A cross-sectional study Questionnaire study was conducted among higher secondary schoolchildren in Rangareddy district, Telangana state, India, for a period of 3 months from December 2018 to February 2019. A total of 120 children from private schools and 259 children from public schools were studied. A quasi-experimental design was adopted for the present study.

Study participants and criteria

Students were selected randomly from grades VI to XII of the total sample, there were 180 boys and 199 females participated in this study. All government and private schools present in Rangareddy district, students studying in 8th, 9th, and 10th of both genders, no history of psychological problems, and use of psychiatric drugs were included in the study. These students who did not give consent and the students who were absent for class on the day of data collecting were excluded from this study.

Sampling technique

The sampling procedure involved multistage sampling procedure was used for the sampling selection, where the Rangareddy district was divided into three groups, namely government senior secondary schools, government-aided senior secondary schools, and private

senior secondary schools. Then from each stratum, 2 were selected randomly by lottery method.

Eligible children were selected randomly from a list obtained from school records. Age eligibility requires that the children fall into the appropriate age at the children sampling.

Sample size determination

Expected proportion = 0.5594 (55.94% prevalence), precision (%) = 5, desired confidence level (%) = 95, sample size (n) = 379 should be taken with 5% alpha error,

$$n = \frac{z^2 pq}{d^2}$$

Where Z = standard normal variate value ($Z = 1.96$ at 5% error).

P = proportion (or) % of interest = 55.94%,
 q = proportion (or) % of interest = 55.94%, $q = (1 - p)$ or 100- p (alternation proportion) = 100-55.94, d = clinically acceptable error = 5%.

Data collection instrument

The data were collected using a self-administered structured questionnaire. The questionnaire consists of three components that included socio-demographic profile like age, gender, class, parents, education was collected. The socioeconomic data include parental marital status, total family income per month. A previously validated and standardized survey instrument DASS (Depression, Anxiety, Stress Scale)-42 was used. Each one has different questions and some score is given for each question. There were 11 questions on depression, 12 for anxiety, and 19 stress.^[8]

The score is given as 0 – never, 1 – some times, 2 – often, and 3 – always.

Data were collected for a period of 7 days. Four days in private and 3 days in public schools before the start of the study we took permission from principals of both the schools. We explained to the study participants about the purpose of study. Informed assent was obtained from every participant and informed consent was obtained from parents and schools teachers. They were assured about confidentiality regarding the sensitive questionnaire. One-to-one interview was taken using a questionnaire. They were interviewed by interacting in English or any other comfortable language they wish. The response was marked in the questionnaire given.

Ethical consideration

The ethical clearance was obtained from the Ethical

committee at the dental college and hospital. The official permission was obtained from the D.E.O Rangareddy district, Government of Telangana state.

Results

The acquired data were tabulated and subjected to statistical analysis. Descriptive statistics were explained by frequency, mean, and standard deviation. The measures of dispersion were analyzed using a *t*-test at a level of significance of 5% ($P < 0.05$).

Table 1 shows that in public schools, the female proportion was more compared to males 58.3% versus 42%, respectively, while in private schools, both sexes were equally distributed. The reason for more girls in the public school shows the male predominance in the society. Parents want their boys to study in private schools and girls are neglected so they are given the option of public schools. In public schools, majority of the children were in tenth class, while in private schools, majority were in the ninth class at the time of the study.

Table 2 shows that the overall prevalence of depression in the children from the public schools was found to be only 5%, that of anxiety was 20.8%, and that of stress was 15.8%; the overall prevalence of depression in children from private schools was found to be 1.9%, that of anxiety was 20.5%, and that of stress was 20.1%.

Table 3 shows that 19% reported TV watching, 8.4% used Internet, 17.4% reported playing, 13% engaged themselves in music, 37% spent time with friends, and 6% said they were busy with some or the other hobbies to cope with the depression, anxiety, and stress.

Table 1: Sex- and class-wise distribution of study participants

Variable	Public school (%)	Private school (%)	Total (%)
Sex			
Males	50 (42)	130 (50.1)	180 (47.4)
Females	70 (58.3)	129 (50)	199 (52.5)
Class			
8	43 (36)	69 (27)	112 (30)
9	29 (24.1)	103 (40)	132 (35)
10	48 (40)	87 (34)	135 (36)

Table 2: Distribution of study participants with depression, anxiety, and stress

Grade	Public school (%)			Private school (%)		
	Depression	Anxiety	Stress	Depression	Anxiety	Stress
Normal	114 (95)	95 (79.1)	101 (84.1)	254 (98.1)	206 (80)	207 (80)
Mild	1 (0.8)	12 (10)	10 (8.3)	3 (1.2)	28 (11)	36 (14)
Moderate	4 (3.3)	7 (6)	4 (3.3)	1 (0.4)	15 (6)	12 (5)
Severe	0	3 (3)	2 (2)	1 (0.4)	8 (3.1)	4 (1.5)
Extremely severe	1 (0.8)	3 (3)	3 (3)	0	2 (0.8)	0
Overall	6 (5)	25 (20.8)	19 (15.8)	5 (1.9)	53 (20.5)	52 (20.1)
Total	120	120	120	259	259	259

Table 4 shows that the mean score of depression and anxiety was found to be similar in children from public and private schools. However, the stress score was significantly higher in children from public schools, i.e., 21.6% compared to children from private schools, i.e., 16.9 ($P < 0.05$).

Discussion

The present study observed that the prevalence of depression and anxiety was slightly more in children from public schools compared to children from private schools, i.e., 5% and 21% versus 2% and 20%, respectively. However, the prevalence of stress was more in children from private schools, i.e., 20% compared to children from public schools, i.e., 16%.

Singh *et al.*^[9] conducted a study on prevalence and factors associated with depression among schoolgoing adolescents in Chandigarh, North India. The proportion of students with depression was more in government schools compared to private schools in this study. This difference can be explained by the socio-economic difference between the students of two types of schools.

Vadageri^[10] conducted a study on the knowledge and awareness about mental health among adolescents. A comparative study of government and private schools adolescents of Kalaburagi city. It shows that government schools' respondents are more known to the mental illness but having lay mean perspectives, whereas private schools' respondents are more toward scientific relevant knowledge about mental illness.

Sandal^[11] conducted a study on the prevalence of depression, anxiety, and stress among schoolgoing adolescents in Chandigarh, North India. Extremely severe depression was very less. The prevalence of DASS was very higher in females for depression and anxiety, the peak age was 18 years.

Chauhan *et al.*^[12] in their study conducted in the public schools of Noida in 2014 found that the prevalence of depression was 38% which is very high compared to

Table 3: Distribution of study participants in relation to coping mechanism

Coping mechanism	Public school (%)	Private school (%)	Total (%)
TV	7 (6)	65 (25.1)	72 (19)
Internet	11 (9.1)	21 (8.1)	32 (8.4)
Play	12 (10)	54 (21)	66 (17.4)
Music	29 (24.1)	19 (7.3)	48 (13)
Spend time with friends	53 (44.1)	86 (33.2)	139 (37)
Hobbies	8 (7)	14 (5.4)	22 (6)
Total	120	259	379

Table 4: Comparison of mean±2 standard deviation depression, anxiety, and stress among public and private schools

Variable	Type of school	n	Mean±2SD	t	P
Depression	Public	6	17.5±7.8	1.40	0.196
	Private	4	11.8±2.4		
Anxiety	Public	25	11.5±4.8	0.90	0.365
	Private	52	10.6±3.9		
Stress	Public	19	21.6±11.6	3.8112	0.0003
	Private	52	16.9±5.4		

SD=Standard deviation

the what we found, i.e., 5% only in the children from the public schools. This might be related to the fact that Noida is very near to Delhi, and hence, people are more aware of the tough competition.

Bansal *et al.*^[13] while conducting a study in public schools reported a prevalence of depression of 18.4%. This is still high when compared to the present study where we observed that the prevalence of depression was 5% among children who hailed from public schools and still lower, i.e., only 2% among children who hailed from private schools.

Deb S *et al.*^[14] conducted a study on the prevalence of anxiety among schoolchildren from Kolkata among private schools in 2015. They found a very high prevalence of anxiety, i.e., 63.5%, while we observed that the prevalence of anxiety was only 20% among the children who were studying in the private schools. Again, the reasons for these differences may be due to differences in the geographical areas and the study questionnaire used. Hence, it seems that children from either public schools or private schools but from metro areas are under more stress compared to children from nonmetro areas or from villages.

Mohanraj and Subbaiah^[15] conducted a study with the objective to study the prevalence of depression among private schoolchildren. They noted that the prevalence of depression among schoolchildren from private schools was 57% in 2010. This was very high compared to the present study findings where we found that the prevalence of depression among children from private schools was only 2%.

Several Indian studies conducted on adolescents have found a prevalence of depression ranging from 10% to 27%, which is much higher than our findings which can be attributed to different instruments used for measurements and different time duration.^[16-18]

Limitations and recommendation

A larger sample size over a larger geographical area would have been desirable; one of the limitations of this study was the lack of use of various data collections tools along with self-assessment questionnaire. Since this was a school-based study, we do not know the effect of excluding nonschoolgoing children. As the data were self-reported, under- or overreporting of data may have taken place due to stigma related to mental disorders.

More over, further studies are recommended to find out the factors leading to these mental disorders. There is a need for greater attention to the psychological well being of students to improve their quality of life.

Conclusion

In both the schools, anxiety and stress were found to be more among study participants. Depression was observed to be less. But if they have more anxiety and stress and if not taken proper care at this point of time, it might get converted into a state of depression. Most of the students in private school said they are anxious and stressed out because of exam fear as well as parents' pressure. Hence, teachers and parents should be educated not to put pressure on their children. They should also be told about the consequences of depression, anxiety, and stress on their children's life.

Ethical statement

Permission from the office of the director public instructions, Hyderabad, for understanding the study in selected schools was obtained. The approval and consent for this study was obtained from the Institutional Review Board. We haven taken written permission for this study from the principals of selected schools explaining them aim and objectives of the study. In case of minor participants, consent was obtained from their parents and the students. Verbal consent was obtained from each participant. There is no conflict with ethical considerations.

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Conflicts of interest

There are no conflicts of interest.

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