Original Research Article

Prevalence of depression, anxiety and stress among school going adolescents in Delhi: a cross sectional study

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ABSTRACT

Background: Adolescence is a stressful period due to physical, psychological, sexual changes and the presence of psychiatric disorders such as depression, anxiety and stress at this stage of life is a matter of concern. Depression is a common mental disorder, characterized by persistent sadness and a loss of interest in activities that you normally enjoy, accompanied by an inability to carry out daily activities, for at least two weeks. The objective of this study is to find the prevalence and associated factors of depression, anxiety and stress among school going adolescents.
Methods: This was a school based descriptive cross-sectional study conducted in the month of July 2018 in an urban school in New Delhi. A semi-structured, self-administered questionnaire to assess socio-demographic profile as well as depression anxiety stress scale (DASS)–21 was used to assess depression, stress and anxiety.
Results: Overall prevalence of depression, anxiety and stress were found to be 47.9%, 65.3%, and 51.8% respectively. Most of student suffered from moderate depression (46.8%), anxiety (33.3%) and mild stress (60.9%). It was noted that these were more common among female students, late adolescent age group, students alone/ away from family, students from separated/ single parents, consuming alcohol and family pressure to perform well in school.
Conclusions: The alarming risk of depression, anxiety and stress among students with low academic satisfaction as well as those who face family pressure to perform better calls for need of parents-student counselling sessions, as well as frequent extracurricular activities to help create a healthier school environment.

Keywords: Prevalence, Depression, Anxiety, Stress, Adolescent

INTRODUCTION

Adolescence is a stressful period due to physical, psychological, sexual changes and the presence of psychiatric disorders such as depression, anxiety and stress at this stage of life is a matter of concern. Depression is a common mental disorder, characterized by persistent sadness and a loss of interest in activities that you normally enjoy, accompanied by an inability to carry out daily activities, for at least two weeks.[1] Anxiety is an emotion characterized by feeling of tension, worried thoughts and physical change like increased blood pressure. People with anxiety disorders usually have recurring intrusive thoughts or concerns.[2]

Psychiatric morbidity in children and adolescents, as defined by Rutter et al is abnormality in behavior, emotions, and relationships which is developmentally inappropriate and of sufficient duration and severity to cause persistent suffering or handicap to the child and/or distress to the family or community.[3] Adolescents suffer from psychosocial problems at one time or the other during their development. Most of these problems are transient and often go unnoticed. It is worthy to note that adolescents may exhibit these problems in one setting and

not in other (e.g., home, group of friends, and school). Therefore, behaviors associated with mental disorders are often misunderstood. They may be considered intentional or deliberately willful. Social exclusion, punishments, and criticism may result in lowered self-esteem in adolescents. A mistaken and inappropriate understanding of mental disorders can also result in children and adolescents being deprived of the assistance they need.

Approximately, 20% of adolescents have a diagnosable mental health disorder. Furthermore, many mental health disorders are first present during adolescence.[4] About 20%–30% of adolescents have one major depressive episode before they reach adulthood.[5] For a quarter of individuals with mood disorders like depression; these first emerge during adolescence. about 50%–75% of adolescents with anxiety disorders and impulse control disorders (such as conduct disorder or attention-deficit/hyperactivity disorder) develop these during adolescence.[5] Existing mental health problems become more complex and intense with children's transition into adolescence.[6] Untreated mental health problems among adolescents may lead to poor school performance, school dropout, strained family relationships, substance abuse, and engaging in risky sexual behaviors.[7]

As, knowing burden of any disease is first step towards its prevention, this study was planned to find prevalence of depression, anxiety and stress among school going adolescents in Delhi and to find factors associated with it.

METHODS

A descriptive cross-sectional study was conducted in the month of July 2018 Kendriya Vidyalaya, Andrew Ganj, a school in New Delhi among students from class 9th to 12th.

For the sample size determination prevalence was taken as 38% based on a study by Chauhan et al, relative error of 15%, 5% level of significance and 10% non-response rate. The minimum sample size calculated came out to be 320.[8] One section was randomly selected by lottery method out of four classes (9–12th). Complete enumeration was done from the randomly selected section from class 9th to 12th to meet the sample size. The students absent on the days of data collection were excluded from the study.

A pre-designed semi-structured, self-administered questionnaire was used to assess socio-demographic profile like age, gender, religion etc. and associated factors like pressure to perform, relations with parents etc. Depression anxiety stress scale (DASS)–21 was used to detect depression, anxiety and stress. The scale contains 21 items and was developed by Lovibond and Lovibond, which is a modified shorter version of DASS-42 questionnaire.[9,10] Each of the three DASS-21 scales contains 7 items, divided into subscales 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 is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/ agitated, irritable/ over-reactive an impatient. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items. All the students were briefed about the study and questionnaire before administering it. Pretesting of the questionnaire was done among the similar age group students of different school. Principals, concerned teachers, and students were informed before the visit. Kuppuswamy scale was used to measure the socio-economic status of the participant.

Scoring and interpretation of DASS-21

Scores on the DASS-21 were multiplied by 2 to calculate the final score. Score of 0-9, 0-7 and 0-11 was taken as normal for depression, anxiety and stress respectively. Recommended cut-off scores for conventional severity labels (normal, moderate, severe) are mentioned in Table 1.

Table 1: DASS-21 score.[9]

	Depression	Anxiety	Stress
Normal	0-9	0-7	0-11
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Very severe	28+	20+	34+

Data was entered on microsoft excel software and statistical analysis was done using a licensed version of SPSS 21. Descriptive analysis was done by calculating proportions, means and standard deviation. Chi square/Fishers Exact test for qualitative and t test for quantitative variable were applied.

The ethical clearance was obtained from institutional ethics committee and permission was taken from the principal. Assent was taken from the students. Strict confidentiality was maintained. After completion of the study the students found to be suffering from any of the studied mental health problem were offered medical help.

RESULTS

A total of 326 students were studied in the present study out of which 64% were males. Minimum age was 13 year and maximum was 18 year. Most of the participants (62%) belonged to late adolescents i.e., 15-18 years. 85% of the students were Hindus, 51.8% belonged to upper middle class and 63% belonged to nuclear family. Maximum numbers of students were in class 9th (136, 42%) (Table 2).

Table 2: Sociodemographic profile of the study participants (n=326).

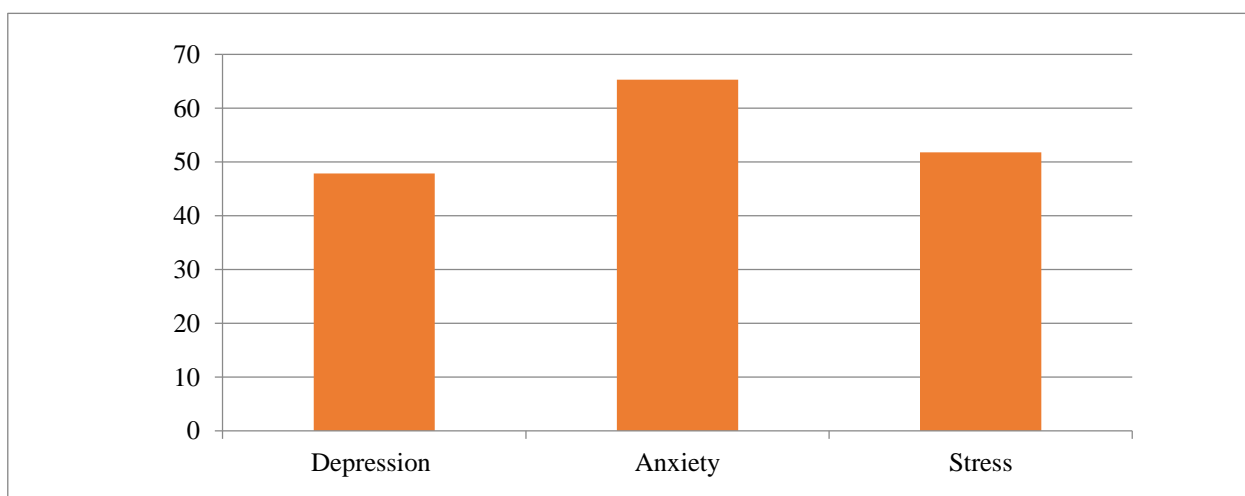| Characteristics	N (%)
Age group (years)	
13-14	124 (38)
15-18	202 (62)
Gender	
Boys	209 (64)
Girls	117 (36)
Religion	
Hindu	277 (85)
Muslim	44 (13)
Others	5 (2)
Class	
9th	136 (42)
10th	64 (19)
11th	84 (26)
12th	42 (13)
Socioeconomic status (revised Kuppuswamy scale 2017)	
Upper middle	169 (51.8)
Lower middle	143 (43.9)
Upper lower	14 (4.3)
Type of family	
Nuclear	205 (63)
Joint	121 (37)

Figure 1: Prevalence of depression, anxiety and depression among the study participants.

Overall prevalence of depression, anxiety and stress was 156 (47.9%), 213 (65.3%), 169 (51.8%) respectively (Figure 1). Most of students suffered from moderate type of depression and anxiety (46.8%, 33.3%) and mild stress (60.9%) (Table 3).

Depression was significantly associated with late adolescent (47.9%), smoking (87.5%), family pressure to perform well (55.6%), and students who were in class of 10th and 12th. Depression was common in those students who were away from home or staying away from their family (52.6%), had single parent or separated or divorced parents (71.4%), not involved in any sports activity (50.9%) and consume alcohol (55.6) however, these were not statistically significant. Anxiety was found to be significantly higher among female students as compared to male students (74.4% vs. 60.3%; p=0.01). Students not satisfied with their academic performance in school were significantly affected with anxiety (73.9%; p=0.041), depression (62%; p=0.001) and stress (65.2%; p=0.02) as compared to those were satisfied. It was noted that DAS were more common in female students, late adolescent age group, students alone/away from family, students from separated/single parents, students who consumed alcohol and had family pressure to perform well in school (Table 4).

Table 3: Distribution of study participants according to levels of severity according to DASS scale.

Variable	Depression	Anxiety	Stress
	N (%)	N (%)	N (%)
Mild	47 (30.1)	53 (24.9)	103 (60.9)
Moderate	73 (46.8)	71 (33.3)	47 (27.8)
Severe	21 (13.5)	32 (15)	16 (9.5)
Very severe	15 (9.6)	57 (26.8)	3 (1.8)
Total	156 (100)	213 (100)	169 (100)

Table 4: Factors associated with depression, anxiety and stress among study participants (n=326).

Variable	Depression (n=156)		Anxiety (n=213)		Stress (n=169)	
	N (%)	P value	N (%)	P value	N (%)	P value
Age (years)						
13-14 (n=124)	45 (36.3)	0.001*	79 (63.7)	0.63	64 (51.6)	0.95
15-18 (n=202)	111 (47.9)		134 (66.3)		105 (52)	
Sex						
Male (n=209)	102 (48.8)	0.64	126 (60.3)	0.01*	104 (49.8)	0.32
Female (n=117)	54 (46.2)		87 (74.4)		65 (55.6)	
Current living status						
With family (n=307)	146 (47.6)	0.66	201 (65.5)	0.84	159 (51.8)	0.94
Alone or away from family(n=19)	10 (52.6)		12 (63.2)		10 (52.6)	
Parents status						
Both are staying together (n=312)	146 (46.8)	0.07	203 (65.1)	0.62	160 (51.3)	0.34
Separated or single parent (n=14)	10 (71.4)		10 (71.4)		9 (64.3)	
Sports activity						
Yes (n=159)	75(47.2)	0.28	101 (63.5)	0.23	80 (50.3)	0.59
No (n=167)	81 (48.5)		112 (67.1)		89 (53.3)	
Alcohol consumption						
Yes (n=9)	5 (55.6)	0.64	6 (66.7)	0.93	5 (55.6)	0.82
No (n=317)	151 (47.6)		207 (65.3)		164 (51.7)	
Smoking						
Yes (n=8)	7 (87.5)	0.023*	6 (75)	0.53	4 (50)	0.92
No (n=318)	149 (46.9)		207 (65.3)		165 (51.8)	
Family pressure to perform well in school						
Yes (n=126)	70 (55.6)	0.027*	81 (64.3)	0.75	72 (57.1)	0.13
No (n=200)	86 (43)		132 (66)		97 (48.5)	
Academic performance						
Satisfied (n=234)	99 (42.3)	0.001*	145 (62)	0.041*	109 (46.6)	0.02*
Not satisfied (n=92)	57 (62)		68 (73.9)		60 (65.2)	
Class						
9th (n=136)	50 (36.8)	0.001*	83 (61)	0.43	50 (53.2)	0.95
10th (n=64)	45 (70.3)		41 (64.1)		105 (51.2)	
11th (n=84)	39 (46.4)		59 (70.2)		14 (51.9)	
12th (n=42)	22 (52.4)		30 (71.4)		169 (51.8)	

*Significant p value.

DISCUSSION

The present study was a descriptive, cross-sectional, school-based study conducted amongst adolescent children. The study aimed to determine the prevalence of depression, anxiety and stress among School going adolescents of 14-18 years age group in Delhi and the factors associated with it.

Presents study showed that overall prevalence of depression among adolescent was 47.9% and is comparable to studies conducted by Jha et al, Nagendra et al and Malik et al, where prevalence of depression was found to be around 50%, which is in line with our study results.[11-13] Several Indian studies conducted in adolescents have found a prevalence of depression ranging from 10% to 27%, which is much lower than our

findings which can be attributed to different instruments used for measurements and different time duration.[14-16]

Most of student suffered from moderate type of depression (46.8%), followed by mild and severe (30.1%, 23.4%). In the study conducted by Malik et al, the prevalence of moderate depression (41.2%) was dominating and similar to our observations.[13] However, Jha et al, Malik et al, Naushad et al observed mild type of depression most prevalent.[11,13,18] Current study revealed that early adolescent age group, smoking, family pressure to perform well in school, academic performance and class 10th and 12th were significantly associated with depression. Same factor was identified by Basin et al and reported a higher prevalence of depression in 10th and 12th division students due to the pressure of academic performance in the board examinations.[19] Similar results have been reported by other studies, namely, Sandal, Kaur et al, Moreira et al, Liu et al and Gray-Stanley et al.[18-22] A study done by Deb et al revealed that 63.5% of the higher secondary students in Kolkata experience academic stress, and the parental pressure for better academic performance was found to be mostly responsible for academic stress as reported by 66.0% of the students.[23]

In case of anxiety, overall prevalence was found 65.3% and it was found that female students were significantly more affected (74.4%) compared to male students (60.3%). Students not satisfied with their academic performance in school were significantly affected with anxiety (65.2%), compare to those were satisfied (46.6%). In contrary, study by Mishra et al reported prevalence was 15% and this difference may be due to different tool (Revised Children's Manifest Anxiety Scale) and settings.[24] Academic stress is a type of stress that arises due to academic factors such as heavy school schedule, unrealistic expectation and demands of parents and teachers, low academic performance, poor study habits, and not having enough time to deal with school's multiple priorities. Stress was also associated significantly with academic performance. Similar results were reported by Sandal et al that level of stress was higher among the participants who were not self-satisfied with their academic performance and whose parents not satisfied.

CONCLUSION

Prevalence of depression, anxiety and stress in our study were found to be high. It is more common among female students, late adolescent age groups, students staying alone/ away from family, students from separated/ single parents, students not satisfied with their academic performance, lack of sports activity, consuming alcohol and those under family pressure to perform well in school.

Recommendation

The alarming risk of depression, anxiety and stress with in students with low academic satisfaction as well as those who face family pressure to perform better so need for parents-student counselling sessions, as well as frequent extracurricular activities to help create a healthier school environment. Rising rates of depression, anxiety and stress among late adolescents compared to early adolescents along with a spike in the rates for those attending board exam classes (10th and 12th), shed light on the need to focus on those attending high school, creating a need for career counselling as well as making an effort as to not burden them to perform better at school or future competitive exams.

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