Original Research Article

Depression, anxiety, stress and its correlates among urban school going adolescents in Tamilnadu, India

Praveena Daya A.[1], Karthikeyan G.[2]*

[1]Department of Community Medicine, Tirunelveli Medical College, Tirunelveli, Tamilnadu, India
[2]Department of Surgery, Nanguneri Government Hospital, Tirunelveli, Tamilnadu, India

*Correspondence:
Dr. Karthikeyan G.,
E-mail: drdayamd@gmail.com

ABSTRACT

Background: Undetected and untreated mental disorders can impair a person's ability to perform at school or work place, cope with daily activities of life and can lead to severe psychiatric disorders and consequences later in their life. Study objective was to determine the prevalence and patterns of depression, anxiety and stress among 400 school going adolescents belonging to classes 10th to 12th of Tirunelveli district, Tamilnadu, India.
Methods: Burden of Depression, anxiety and stress was assessed using DASS21 questionnaire. Chi-square test was done using SPSS software version 21 to test for statistical significance.
Results: Overall prevalence of depression, anxiety and stress was 73.6%, 86.5% and 24.7% respectively. Depression (p value=0.01), Anxiety (p value = 0.005) and stress (p value = 0.007) were significantly observed more among 10th class students when compared with other classes.
Conclusions: The present study has identified a higher prevalence of depression, anxiety and stress among students. This warrants immediate action of creating awareness among teachers and parents in early identification and treatment to prevent serious consequences in later life.

Keywords: Anxiety, Depression, Mental disorders, Stress, Urban

INTRODUCTION

Adolescence includes the age group between 10 to 19 years of age and it is a transitional phase from child to an adult. During this phase, lots of physical, psychological and behavioural changes take place which contribute to various mental health issues. Mental health problems like depression, anxiety and other conditions can lead to various behavioural issues at school or home, increases involvement in health risk behaviours like substance use and can lead to reduced academic performance in schools.[1]

Worldwide around 10-20% of children and adolescents are estimated to be affected by mental health issues which accounts for about 15-30% of disability-adjusted life years lost in first thirty years of life. Many of these mental health issues that emerge during late childhood phase or early adolescent phase can continue to adulthood.[1] Due to stigma, discrimination and inaccessibility and unavailability to mental health services, often these issues are undiagnosed and left untreated. These issues are not frequently addressed in families and in schools. Mental health is influenced by various factors like age, gender, physical illnesses, biological, psychological, family and social factors. Understanding the association between mental health and physical health is essential for prevention and effective treatment.

Early identification and treatment can help these people to perform well academically, socially and vocationally.

First effective step in addressing these mental health issues is identifying and creating an evidence base for number of people in need or number of people affected by these issues which can help in creating public awareness regarding these issues. Due to paucity of evidence or literature in the current geographic region, the current study has been conducted to determine the prevalence of depression, anxiety, stress and its correlates among urban school going adolescents in Tirunelveli district, Tamilnadu, India.

Objectives was to determine the prevalence of depression, anxiety, stress and its correlates among urban school going adolescents in Tirunelveli district, Tamilnadu, India.

METHODS

This was a school based cross-sectional study.

Study setting and sample size

Study was conducted among 400 adolescent students in a selected school in an urban area of Tirunelveli district, Tamilnadu, India. Students in standards 10th to 12th were purposively selected for the study

Study instrument

Study instrument was Depression Anxiety Stress Scales i.e., DASS 21 items scale.[2] It was designed by University of New South Wales, Australia to measure emotional states like depression, anxiety and stress. It comprises of set of 3 self-report scales and each scale contains 7 items which were further subdivided into subscales with the similar content. Based on scores, the severities of the emotional states were graded as normal, mild, moderate, severe, and extremely severe.

Procedure

After obtaining permission from the school authorities and after obtaining consent from the parents of the students, 450 adolescent students in classes 10th to 12th were approached for participation in the study. Purpose of the study was informed and confidentiality was assured. Out of 450 students, only 400 were interested in participating in the study and data was collected from them using a self-administered questionnaire. Questionnaire was administered during the leisure time of the students and privacy was maintained during data collection.

Method of analysis

Data was entered in Microsoft excel sheet 2013, descriptive analysis was done using IBM SPSS software version 21 and the outcome were expressed in prevalence percentages. For assessing statistical significance,

Pearson's Chi-square test was used and p value less than 0.05 was considered to be statistically significant.

RESULTS

The study population was described as follows in Table 1. Among the study population 35% belonged to the age group of 16. Mean age of the study population is 15.8. Mean (SD) value is 15.8 (.926). Among the study population 55% were females and 45% were males. Among the study population majority (53%) belong to upper lower class. Prevalence of depression, anxiety and stress among study participants as per DASS grades were described in Table 2.

Table 1: Description of study population (n=400).

Age in years	Frequency	%
14	25	6
15	129	32
16	140	35
17	100	25
18	6	2
Total	400	100
Gender	**Frequency**	**%**
Males	181	45
Females	219	55
Class	**Frequency**	**%**
10th	126	31.5
11th	126	31.5
12th	148	37
Total	400	100
Socio-economic class as per Modified Kuppuswamy Socio-economic scale	**Frequency**	**%**
Upper	76	19
Upper Middle	48	12
Lower middle	36	9
Upper Lower	212	53
Lower	28	7
Total	400	100

Table 2: Prevalence of depression, anxiety and stress among study participants (n=400).

Grades	Depression		Anxiety		Stress	
	N	%	N	%	N	%
Normal	106	26.5	54	13.5	301	75.3
Mild	75	18.8	32	8.0	39	9.7
Moderate	146	36.5	103	25.7	39	9.7
Severe	56	14.0	69	17.3	19	4.8
Extremely Severe	17	4.2	142	35.5	2	0.5
Total	400	100	400	100	400	100

Overall prevalence of depression, anxiety and stress among the study participants was 73.5%, 86.5% and 24.7% respectively. Among the study participants, 4.2%

were included in grade of extremely severe depression, 35.5% were suffering from extremely severe anxiety and 0.5% were suffering from extremely severe stress.

Prevalence of depression, anxiety and stress among participants based on gender and class is shown in Table 3.

Table 3: Prevalence of depression, anxiety and stress among study participants based on gender and class (n=400).

	Grades of depression					
Gender	**Normal N (%)**	**Mild N (%)**	**Moderate N (%)**	**Severe N (%)**	**Extremely severe, N (%)**	**Total N (%)**
Females	64 (29.2)	43 (19.6)	87(39.7)	23 (10.5)	2 (1)	219 (100)
Males	42 (23.2)	32 (17.7)	59 (32.6)	33 (18.2)	15 (8.3)	181 (100)
Total	106 (26.5)	75 (18.8)	146 (36.5)	56 (14)	17 (4.2)	400 (100)
Grades of Anxiety						
Gender	**Normal N (%)**	**Mild N (%)**	**Moderate N (%)**	**Severe N (%)**	**Extremely severe, N (%)**	**Total N (%)**
Females	33 (15.1)	22 (10)	54 (24.7)	34 (15.5)	76 (34.7)	219 (100)
Males	21 (11.6)	10 (5.5)	49 (27.1)	35 (19.3)	66 (36.5)	181 (100)
Total	54 (13.5)	32 (8)	103 (25.7)	69 (17.3)	142 (35.5)	400 (100)
Grades of Stress						
Gender	**Normal N (%)**	**Mild N (%)**	**Moderate N (%)**	**Severe N (%)**	**Extremely severe, N (%)**	**Total N (%)**
Females	190 (86.8)	12 (5.5)	13 (5.8)	3 (1.4)	1 (0.5)	219 (100)
Males	111 (61.3)	27 (14.9)	26 (14.4)	16 (8.8)	1 (0.6)	181 (100)
Total	301 (75.3)	39 (9.7)	39 (9.7)	19 (4.8)	2 (0.5)	400 (100)
Grades of depression						
Class	**Normal N (%)**	**Mild N (%)**	**Moderate N (%)**	**Severe N (%)**	**Extremely severe, N (%)**	**Total**
10th	22 (17.6)	25 (19.8)	58 (46)	13(10.3)	8 (6.3)	126 (100)
11th	37 (29.4)	23 (18.3)	38 (30.1)	21(16.7)	7 (5.5)	126 (100)
12th	47 (31.8)	27 (18.2)	50 (33.7)	22(14.9)	2 (1.4)	148 (100)
Total	106 (26.5)	75 (18.8)	146 (36.5)	56 (14)	17 (4.2)	400 (100)
Grades of Anxiety						
Class	**Normal N (%)**	**Mild N (%)**	**Moderate N (%)**	**Severe N (%)**	**Extremely severe, N (%)**	**Total N (%)**
10th	9 (7.1)	5 (4)	48 (38.1)	27(21.4)	37 (29.4)	126 (100)
11th	15 (11.9)	10 (8)	19 (15.1)	25(19.8)	57 (45.2)	126 (100)
12th	30 (20.3)	17 (11.5)	36 (24.3)	17(11.5)	48 (32.4)	148 (100)
Total	54 (13.5)	32 (8)	103 (25.7)	69(17.3)	142 (35.5)	400 (100)
Grades of Stress						
Class	**Normal N (%)**	**Mild N (%)**	**Moderate N (%)**	**Severe N (%)**	**Extremely severe, N (%)**	**Total N (%)**
10th	84 (66.7)	12 (9.5)	20 (15.9)	8 (6.3)	2 (1.6)	126 (100)
11th	94 (74.6)	15 (12)	9 (7.1)	8 (6.3)	0 (0)	126 (100)
12th	123 (83.1)	12 (8.1)	10 (6.8)	3 (2)	0 (0)	148 (100)
Total	301 (75.3)	39 (9.7)	39 (9.7)	19 (4.8)	2 (0.5)	400 (100)

Age had no significant effect on depression, anxiety and stress. Severe and extremely severe depression were observed more in boys compared to girls. But there is no statistically significant difference observed between males and females related to depression and anxiety. Significant difference exists between males and females with regard to stress and it is observed more among males (p-value <0.001). Depression (p value=0.01), Anxiety (p value = 0.005) and stress (p value = 0.007) were significantly observed more among 10th class students when compared with other classes.

DISCUSSION

The present study has identified the prevalence of depression, anxiety and stress among 400 school going adolescents in Tirunelveli district. Overall prevalence of depression, anxiety and stress was found to be 73.5%, 86.5% and 24.7% respectively in the current study.

Study by Kumar KS and Akoijam BS among 830 higher secondary school students of Imphal, Manipur showed the prevalence of depression, anxiety, and stress as 19.5%, 24.4% and 21.1%. Around 81.6% of the respondents had at least one of the disorder studied, 34.7% had all the three disorders studied. They also showed the prevalence of depression, anxiety, and stress were more among females and significant difference was observed for anxiety and stress. Their study also found a significantly higher prevalence of depression and stress among 12th class students.[3] The current study has identified higher prevalence of depression, anxiety, and stress (73.5%, 86.5% and 24.7%) when compared with their study and also showed a higher prevalence of stress among males and higher level of depression, anxiety, and stress among 10th class students.

Study by Sandal RK et al, in Chandigarh among 470 school going adolescents found the prevalence of depression, anxiety and stress among students as 65.53%, 80.85%, and 47.02%. Around 57.65% had both depression and anxiety. Three percent were suffering from extremely severe depression. Overall prevalence of depression, anxiety and stress was observed more among females and among those who are 18 years old.[4] The current study has showed a higher prevalence of depression, anxiety and lower prevalence of stress among students when compared with this study and higher level of stress among males.

Bhasin SK assessed the burden of depression, anxiety and stress among 242 school students belonging to classes 9th -12th in Delhi, India and showed that females had a significantly higher level of depression. Depression, anxiety and Stress were significantly observed more among 10th and 12th class students when compared to 9th and 11th class students.[5] The current study has showed a higher prevalence of depression, anxiety and stress was observed 10th class students and among males.

Study by Wahab S et al, among secondary boarding school students in Malaysia showed the prevalences of depression, anxiety and stress as 39.7%, 67.1% and 44.9% respectively.[6] The results of depression and anxiety are much lower than the results of our study whereas stress is significantly higher in their study.

Studies had assessed the prevalence of depression among students in various geographic regions. Study by Nagendra K et al among 3141 students belonging to 15-19 years from various government, private schools and Colleges of Davangere, India showed a 57.7% prevalence of depression among students and it was observed more among males. Moderate grade of depression was most commonly observed among the students followed by mild and severe types of depression.[7] Despite showing a higher prevalence of depression (73.5%) among students, few results of the current study are comparable with this study as the current study too showed moderate grade of depression as the most common grade observed followed

by mild and severe types among students. Study by Arslan G et al, in Turkey among 822 students using Beck Depression Inventory showed a 21.8% prevalence of depression and it was observed more among males (23.6%).[8]

The following studies have showed contrary results with the current study as they have showed a lesser prevalence of depression and higher level of depression among females. Study by Saluja G et al, in US among 9863 students belonging to grades 6, 8, and 10 showed 18% prevalence of depression and it was reported more among females.[9] A cross-sectional study by Jha KK et al, among 1412 students belonging to 9th to 12th class in Bihar using Beck's depression inventory II showed the prevalence of depression to be 49.2% and significantly observed more among girls.[10]

The present study has identified a higher prevalence of depression, anxiety and stress and this may be due to the pressure faced by the students to perform well academically and to enter professional courses. Family support plays a vital role in alleviating these mental health disorders. Identifying the factors that induce stress and affects the wellbeing of children is important and parents need to be aware of these factors. Children should be subjected to structured daily routines like regular times for playing, being with others, learning, eating and sleeping that can reduce their unnecessary stress. Routine follow up by teachers and health services has to be there for children with these issues to prevent them from further consequences.

CONCLUSION

The present study has identified the prevalence of depression, anxiety and stress to be 73.5%, 86.5% and 24.7% respectively. If undetected and untreated this can affect their academic performance and can lead to psychological issues later in their life. So, sensitizing the parents through parent teachers meeting can create awareness among the parents regarding the importance of mental health of children. Teachers need to be trained for identifying and reporting these issues earlier to the parents. Health education sessions need to be organized regularly to the students regarding coping strategies and life skills to prevent themselves from these problems.

REFERENCES

1. World Health Organization. Mental health status of adolescents in South-East Asia: evidence for action; 2017:84. Available from: http://apps.who.int/iris/bitstream/handle/10665/254982/9789290225737-eng.pdf;jsessionid=727605A2BBF6B06BF5E1A7DDC11D812D?sequence=1.

2. Lovibond SH, Lovibond PF. Manual for the Depression Anxiety Stress Scales. 2nd. edi. Sydney: Psychology Foundation. 1995.
3. Kumar KS, Akoijam BS. Depression, anxiety and stress among higher secondary school students of Imphal, Manipur. Indian J Community Med. 2017;42:94-6.
4. Sandal RK, Goel NK, Sharma MK, Bakshi RK, Singh N, and Kumar D. Prevalence of Depression, Anxiety and Stress among school going adolescent in Chandigarh J Family Med Prim Care. 2017;6(2): 405-10.
5. Bhasin SK, Sharma R and Saini NK. Depression, anxiety and stress among adolescent students belonging to affluent families: A school-based study. Indian J Pediatr. 2010;77(2):161-5.
6. Wahab S, Rahman FN, Wan Hasan WM, Zamani IZ, Arbaiei NC, Khor SL, et al. Stressors in secondary boarding school students: Association with stress, anxiety and depressive symptoms. Asia-Pacific Psychiatry. 2013 Apr;5:82-9.
7. Nagendra K, Sanjay D, Gouli C, Kalappanavar NK, VinodKumar CS. Prevalence and association of depression and suicidal tendency among adolescent students. Inter J Biomed Adv Res. 2012;03(09):714-9.
8. Arslan G, Ayranci U, Unsal A, Arslantas D. Prevalence of depression, its correlates among students, and its effect on health-related quality of life in a Turkish university. Upsala J Med Sci. 2009 Jan 1;114(3):170-7.
9. Saluja G, Iachan R, Scheidt PC, Overpeck MD, Sun W, Giedd JN. Prevalence of and risk factors for depressive symptoms among young adolescents. Arch Pediatr Adolesc Med. 2004;158(8):760-5.
10. Jha KK, Singh SK, Nirala SK, Kumar C, Kumar P, Agarwal N. Prevalence of depression among school-going adolescents in an urban area of Bihar, India. Indian J Psychol Med. 2017;39:3:287-92.