



Depression among Adolescent Students in a Rural Block of Haryana: A Cross Sectional Study

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Abstract

Background: Depression among adolescent is an area of increasing concern worldwide. This study aimed to assess the prevalence of depression among school going adolescents in government and private schools in a rural area of block Beri of Haryana.

Methods: A cross sectional study was conducted in a sample size of 600 students (300 males and 300 females) studying in class 8th to 12th. A pre designed, pre tested tool SCL 90 R containing 90 items was used to screen depression in these students. Depression is one of the psychiatric morbidity screened by this tool. Cut off point of estimated raw score of 1 was used to label as depression. All the statistical analysis was carried out using SPSS 20.

Results: The overall prevalence of depression was found to be 39.1% with mild depression to be 33.1% and moderate to severe depression to be 6%. Depression was significantly more among female students (45%) than male students (33.3%). Overall prevalence of depression significantly increased with age. It was found to be 34.3% among 13-14 years age-group, 41% among 15-16 years age-group and 57.1% among 17-19 years age-group. The association of depression with other socio demographic profile like socio economic status, literacy level of mother and father, employment status of mother was found to be non-significant.

Conclusion: It is concluded from the present study that more than one – third (39%) of school adolescents suffered from depression. Reasons for such high prevalence of depression need to be determined. At the same time teachers and parents should be made aware of this problem and appropriate counselling of students should be done through regular school-based screening programme.

Keywords: Depression, School adolescents, SCL 90 R tool

Introduction

Depression is an illness 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. In addition, people with depression

normally have several of the following symptoms like loss of energy; change in appetite; sleeping more or less; anxiety; reduced concentration; indecisiveness; restlessness; feelings of worthlessness, guilt, or hopelessness; and thoughts of self-harm or suicide.¹

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Globally, around 350 million people of all ages, from all walks of life, suffer from depression. It causes mental anguish and impacts the people's ability to carry out even the simplest everyday tasks, with sometimes devastating consequences for relationships with family and friends. At its worst, depression can lead to suicide, now the second leading cause of death in 15-29 year old age-group.²

The number of people living with depression in India has increased by 18.4% between 2005 and 2015. Urbanisation is definitely a cause, as is minimal interpersonal interactions and the modern way of living (inactivity). The risk of becoming depressed is increased by poverty, unemployment, life events such as the death of a loved one or a relationship break-up, physical illness and problems caused by alcohol and drug use.¹

The period of youth is a time of contradictions when a person goes through many changes and experiences stresses such as emotional, behavioral, sexual, economic, academic and social, besides efforts to discover one's identity with psychosocial and sexual maturation. The perceived burdens on an individual could independently influence mental health or could be conceptualized as stressors. In general, stress occurs when there are demands on an individual that exceed his or her coping capabilities

Recent studies have shown that more than 20% adolescents in the general population have emotional problems and one-third of adolescents attending psychiatric clinics suffer from depression.³

Major depression often appears during the adolescent years, and early onset depression interferes with a child's psychological, social, and academic functioning, placing him or her at greater risk for problems such as substance abuse and suicidal behavior.^{4,5}

Studies have found that 3-9% of teenagers meet criteria for depression at any one time and as many as 20% of teenagers report a lifetime prevalence of depression. Since this is the major problem among students which is leading to increased suicide rate among students, the present study was planned with the aim to estimate the prevalence of depression and to find out the association of depression with socio-demographic factors among school going adolescents in a government school in the rural area of Haryana.

Methods

Study area

The study was undertaken in rural block in the state of Haryana which is the rural field practice area attached to Department of Community Medicine of Pt.B.D Sharma PGIMS, Rohtak, Haryana.

Study period

The study was conducted over a period of one year from October 2016 to September 2017.

Study population

School going adolescents including both boys and girls from 8th to 12th classes from both government and private secondary and senior secondary schools in the rural block comprised the study population. The age group included adolescents in age group of 13-19 years as they can tell about themselves and express their feelings more appropriately than students of less than 13 years of age.

Sample size

One of recent meta-analysis carried out on school based studies in the year 2013 on prevalence of child and adolescent psychiatric disorders in India, done by Patra et al, reported the prevalence to be 23.33%.⁶ Taking prevalence to be 23% and allowable error to be 15% of prevalence, the sample size was thus calculated to be 595. So for the purpose of present study 600 subjects were selected.

Sampling technique

List of schools were obtained from DEO (District Education Officer). Prior permission from the DEO was obtained for the present study after briefing him about study purpose and objectives. All the senior secondary schools in that block were stratified into two groups i.e. government and private. A total of 3 schools from each stratum were selected randomly by lottery method from list of all eligible schools.

Eligibility criteria for school

All those schools which had strength of more than 100 students from 8th to 12th class and at least 20 students in each of these classes qualified the eligibility criteria for including in the study for the purpose of adequacy of sample size. A total of six schools were selected out of the list of eligible schools.

A total of 600 students, 100 from each school and 20 from each class were selected taking both boys and girls from each class in equal proportion. Simple random sampling technique was used to select students from each class. Lottery method was used for students' selection in each class. Chits were made of students who were present on the day of visit and also fulfilled the inclusion criteria (separately for boys and girls for each class) and among them 10 boys and 10 girls were selected randomly.

Criteria for selection

Prior permission was obtained from the concerned

Principals of the selected schools after briefing them about the study and its objectives. A written informed consent from parents of these students was obtained one day prior to conducting the study through Principal/class teacher. Exclusion criteria were: a) students who do not agree for valid consent; b) who were absent on the day of survey; and c) those having gross hearing impairment, diagnosed organic brain pathology or articulation disorders. Apparently otherwise healthy students attending school were included in this study.

Study tool

The data was collected using pre-designed, pre-tested, structured schedule standardized as "symptom checklist-90 R" which was first introduced by Derogatis and Lipman, and it is now used in its revised form (SCL-90-R) by its authors.⁷ It comprises of 90 questions and each item has 5 answer choices using five levels (between 0-4). The Likert-type question-answer model was used in SCL-90-R (none=0, too much=4). The questions were aimed to assess different symptoms and states of the mind. The diseases assessed by these question groups were somatization, obsessive-compulsive disease, inter-personal sensibility, depression, anxiety, hostility, phobic anxiety, paranoid thoughts, psychotic and additional symptoms. The SCL-90 takes between 12 and 20 minutes to complete.

With regard to its reliability, the internal consistency coefficient α values for the nine symptom dimensions ranged from 0.77 for psychotism to a high of 0.90 for depression. Additionally, the few validity studies of the SCL-90-R demonstrated that this scale has equal validity compared with other self-report inventories. The SCL-90-R has been standardized and used in the Greek population and its reliability (Cronbach's α) for the total of the items is 0.97.⁸⁻¹⁰ In this study, the SCL-90-R depression subscale score was studied.

In this study, raw score of SCL 90 R subscales was reported. Raw scores are calculated by dividing the sum of scores for a dimension by number of items in the dimension. The SCL 90 R has 3 global indexes: The global severity index (GSI) measures the extent or depth of the individual's psychiatric disturbances; Positive symptom total (PST) counts the total number of questions rated above 1 point; Positive symptom distress index (PSDI) is calculated by dividing the sum of all items values by the PST. The global severity index (GSI) for SCL-90 R is calculated as the average score of the 90 items of the questionnaire.

A cut off of each subscale scores >1 as suggestive of possible psychopathology was used based on the study of Siri C and his colleagues.¹¹ In addition, the whole study group was subdivided into three categories within each subscale to better characterize differences between students with

and without psychopathological symptoms i.e. students without the symptom = scores <1 ; With mild symptoms = scores 1- 2; With moderate - severe symptoms = scores >2 .

Additionally, the socio demographic level of each student was studied to know the association of those factors with depression. The modified B G Prasad scale was used to assess socioeconomic status of respondents as adolescents studying in schools.

Data compilation and analysis

The data was collected and entered in the MS EXCEL spread sheet, was coded appropriately and later cleansed for any possible typing error and then the data was subjected to appropriate statistical tests using SPSS 20 (Statistical package for social sciences) software as per study objectives. Descriptive statistics in terms of percentages was used to show the simple distribution of subjects in terms of socio- demographic profile. Inferential statistics like Chi square was used for qualitative data to compare depression with different variables. After analysis of the data, individuals with high cut off value was referred to Psychiatric department, PGIMS for detailed evaluation, confirm diagnosis and then treatment.

Results

The distribution of study subject of government and private schools students on the basis of age, class, gender, father's literacy level, mother's literacy level, mother's employment status and socio economic status is shown in table 1.

In table 2, it was observed that nearly 39% adolescents suffered from depression out of which 33.1% suffered from mild depression and 6% suffered from moderate to severe depression.

As depicted in table 3, in government school 35.3% students had mild depression and 3% had moderate to severe depression whereas in private school students 31% had mild depression and 9% had severe depression. This difference was found to be statistically significant ($p = < 0.05$).

In table 4, it was found that depression increased significantly with the age of the students with maximum depression in 17-19 years adolescents and minimum among 13-14 years students. Depression was minimum among 8th class students and maximum in 12th class students. As the class increased depression also increased and this association was found to be significant. Females were significantly more depressed than males. Depression was more among upper middle class and middle class but this association was non-significant. Depression was found to be non-significant on the basis of literacy level of father and mother as well as employment status of mother.

Table 1. Distribution of students according to socio demographic profile among students of government and private schools

Variables	Government Sr. Sec. Schools (%) n = 300	Private Sr. Sec. School (%) n = 300	Total
Age			
13-14 years	143 (47.5%)	157 (52.3%)	300 (50%)
15-16 years	127 (42.2%)	117 (39%)	244 (40.7%)
17-19 years	30 (10.0%)	26 (8.7%)	56 (9.33%)
Class			
8 th class	60 (20%)	60 (20%)	120 (20%)
9 th class	60 (20%)	60 (20%)	120 (20%)
10 th class	60 (20%)	60 (20%)	120 (20%)
11 th class	60 (20%)	60 (20%)	120 (20%)
12 class	60 (20%)	60 (20%)	120 (20%)
Gender			
Males	150 (50%)	150 (50%)	300 (50%)
Females	150 (50%)	150 (50%)	300 (50%)
Socio economic status (According to Modified B.G Prasad scale)			
Upper class	2 (0.7%)	56 (18.7%)	58 (9.7%)
Upper middle class	25 (8.3%)	76 (25.3%)	101 (16.8%)
Middle class	69 (22.9%)	84 (28.0%)	153 (25.5%)
Lower middle class	121 (40.2%)	64 (21.3%)	185 (30.8%)
Lower class	83 (27.6%)	20 (6.7%)	103 (17.2%)
Literacy level of father			

Illiterate	16 (5.3%)	2 (0.7%)	18 (3%)
1-8 class	97 (32.3%)	16 (5.3%)	113 (18.8%)
9-10 class	122 (40.7%)	88 (29.3%)	210 (35%)
11-12 class and above	65 (21.7%)	194 (64.7%)	259 (43.1%)
Literacy level of mother			
Illiterate	50 (16.7%)	8 (2.7%)	58 (9.7%)
1-8 class	153 (51.0%)	43 (14.3%)	196 (32.7%)
9-10 class	76 (25.3%)	139 (46.3%)	215 (35.8%)
11-12 class and above	21 (7.0%)	110 (36.7%)	131 (21.8%)
Mother's employment status			
Employed	48 (16.0%)	55 (18.3%)	103 (17.1%)
Unemployed	252 (84%)	245 (81.7%)	497 (82.9%)

Table 2. Distribution of grades of depression among study subjects

Subscale	Frequency (n = 600)	Percentage
No Depression	365	60.8
Mild Depression	199	33.1
Moderate to severe Depression	36	6
Total	600	100

Table 3. Distribution of depression among study subjects according to type of school

Variable	Government school (%) n = 300	Private school (%) n = 300
No depression	185 (61.7%)	180 (60%)
Mild depression	106 (35.3%)	93 (31%)
Moderate to severe depression	9 (3%)	27 (9%)
Test Statistics: $\chi^2 = 9.918$	df = 2	p = 0.007

Table 4. Distribution of depression on basis of socio demographic profile of the study subjects

Variable	Students without depression	Students with depression	Level of significance
Age			
13-14 years	197 (65.7%)	103 (34.3%)	$\chi^2 = 10.874$, df = 2, p = 0.004
15-16 years	144 (59%)	100 (41%)	
17-19 years	24 (42.9%)	32 (57.1%)	
Class			
8 th class	86 (71.7%)	34 (28.3%)	$\chi^2 = 13.668$, df = 4, p = 0.008
9 th class	72 (60%)	48 (40%)	
10 th class	72 (60%)	48 (40%)	
11 th class	76 (63.3%)	44 (36.7%)	
12 class	59 (48.8%)	62 (51.2%)	
Gender			
Males	200 (66.7%)	100 (33.3%)	$\chi^2 = 8.569$, df = 1, p = 0.003
Females	165 (55%)	135 (45%)	
Socio economic status (According to Modified B.G Prasad scale)			
Upper class	35 (60.3%)	23 (39.7%)	$\chi^2 = 1.435$, df = 4, p = 0.838
Upper middle class	59 (58.4%)	42 (41.6%)	
Middle class	89 (58.2%)	64 (41.8%)	
Lower middle class	116 (62.7%)	69 (37.3%)	
Lower class	66 (64.1%)	37 (35.9%)	
Literacy level of father			
Illiterate	12 (66.7%)	6 (33.3%)	$\chi^2 = 1.423$, df = 3, p = 0.700
1-8 class	64 (56.6%)	49 (43.4%)	
9-10 class	127 (60.5%)	83 (39.5%)	
11-12 class and above	162 (62.5%)	97 (37.5%)	
Literacy level of mother			
Illiterate	33 (56.9%)	25 (43.1%)	$\chi^2 = 1.199$, df = 3, p = 0.753
1-8 class	124 (63.3%)	72 (36.7%)	
9-10 class	127 (59.1%)	88 (40.9%)	
11-12 class and above	81 (61.8%)	50 (38.2%)	
Mother's employment status			
Unemployed	301 (60.6%)	196 (39.4%)	$\chi^2 = 0.089$, df = 1, p = 0.766
Employed	64 (62.1%)	39 (37.9%)	

Discussion

In the present study, the overall prevalence of depression was 39.1% out of which 33.2% had mild depression and 6.0% had moderate to severe depression. It was similar to the finding of Chauhan et al (2014),¹² where prevalence of depression was 38% among study subjects in the age group of 16-18 years. Singh et al (2017)¹³ conducted his study at Chandigarh and found that 40% of adolescent had depressive disorders, out of which 29.7% had mild depression, 15.5% had moderate depression, 3.7% had moderately severe depression and 1.1% had severe depression. The reason for depression among adolescents may be, their inability to cope up with stresses such as emotional, behavioral, sexual, economic, academic and social and less of support from their parents, teachers and also from elderly family members because of more and more nuclear family trends. Many studies conducted by different authors found prevalence of depression to be lower than our study like Trivedi et al (2016)¹⁴ conducted his study at Manipal and found that 22.45% students were depressed. 6.9% students had borderline depression, 8.9% moderate depression, 4.1% severe depression and 2.6% had extreme depression. According to study conducted in public school Pune by Bansal et al (2009)¹⁵ 15.2% of school going adolescents had evidence of distress and 18.4% were found to be depressed. The prevalence was higher in the study conducted by Goud et al at (2014),¹⁶ at Bellary and found that the overall prevalence of depression was 64.9%. This difference may be because of the difference in study area and difference in timing at which study was conducted.

The present study reflected that females (45%) were more prone to have depression in comparison to males (33.3%) and this finding was found to be statistically significant. This finding was similar to study conducted by Chauhan et al¹² where males (35%) were found less depressed as compared to the females (41.8%). According to Trivedi et al¹⁴, girls were significantly more depressed ($P = 0.016$) than boys. According to Goud et al at (2014)¹⁶, among all males surveyed 63.3% were depressed and among all females surveyed 66.9% were depressed, thus depicting prevalence to be high among females.

This study concluded that depression increased significantly with age of students with maximum depression among 17-19 years (57.1%) and minimum depression in 13-14 years of age (34.3%). In the study conducted by Trivedi et al¹⁴ depression was detected among a significant number ($P = 0.012$) of older adolescents (ages 14 and 15 years). According to study conducted by Goud et al,¹⁶ depression was found to be increasing with age with 61.1% upto the age of 19 years and 67.8% above 19 years.

Depression can be prevented and treated. A better understanding of what depression is, and how it can be

prevented and treated, will help us to reduce the stigma associated with the condition, and lead to more people seeking help. Treatment usually involves either a talking therapy or antidepressant medication or a combination of these. Overcoming the stigma often associated with depression will lead to more people getting help. Talking with people you trust can be a first step towards recovery from depression.

Limitations

The confirmation of the diagnosis by psychiatrist was not done at the time of interview due to feasibility issues. However, studies have shown that there is concordance in the diagnosis made on the basis of screening instrument and clinical assessment by psychiatrist. Self-reporting in the class room might have created confidentiality issue. Because of poor understanding of the subject about mental health issues by these adolescents, some questions might not be correctly answered by them which might have caused some variation in the results.

Conclusion

It is concluded that more than one – third (39%) of adolescents who were apparently healthy suffered from depression. The risk factors except gender, age and class of students were not found significantly associated. Therefore, more research is required in this area to find reasons. However, high prevalence warrant awareness campaign among teachers and parents. There is a need for school-based screening program for depression among adolescents for appropriate intervention.

Parents should be sensitized about the increasing burden of mental health problems among adolescents and need to impart skills to provide emotional support to them. So that these adolescents can discuss their problems with their parents without fear and guilt. Teachers as well as non-teaching staffs should be trained about various behavioral aspects expected from students and ways of managing these students efficiently. Parents of the students should be trained about the parenting techniques at school by special and compulsory parent teacher meeting sessions. Trained psychologist and counselors should be appointed in all schools.

Conflict of Interest: None

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