

Original Research Article

Prevalence of depression among school going adolescents in an urban area of Karnataka, India: a cross sectional study

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ABSTRACT

Background: World Health Organization (WHO) recognizes depressive disorders as priority mental health disorder of adolescence due to its high prevalence, recurrence, ability to cause significant complications and impairment. Emotional instability resulted in adolescent period make them vulnerable to depression. Depression is one of the under recognized health problem among adolescents. The aim of the study was to explore the prevalence of depression among school going adolescents.

Methods: A cross sectional study was conducted among the school going adolescents of urban area of Belgaum, Karnataka. The self-administered questionnaire of Beck's Depression Inventory (BDI) II was used to assess the prevalence of depression. Data was analysed using MS-Excel 2007, SPSS software version 22.0, proportion and chi-square test were applied.

Results: The overall prevalence of depression in this study was 62.60%. Association between sex, type of family and socio-economic status was not statistically significant. Mild depression was more prevalent among the adolescents in the present study.

Conclusions: We recommend that teachers and parents be made aware of this problem with help of school counsellors so that the depressed adolescent can be identified and helped rather than suffer silently.

Keywords: Adolescent, BDI, Depression, Urban

INTRODUCTION

World Health Organization recognizes depressive disorders as priority mental health disorder of adolescence due to its high prevalence, recurrence, ability to cause significant complications and impairment.¹ The lifetime prevalence for major depression in adolescence is 15% to 20% globally.² India contributes 21% of adolescent's population in the world. One out of six children affected with mental disorder.

Single largest contributor to the global burden of disease in the age group 15-45 years is depression.³ By the end of 2020, depression is projected to reach second place

ranking of disability-adjusted life year (DALY) calculated for all ages and sex.⁴ Depression is a major risk factor for committing suicide which is among the 3 leading causes of mortality in the age group of 15-35 years.⁵

Depression in adolescent is associated with poor school performance, school dropout, strained family relationships, substance abuse, and engaging in risky sexual behaviors.⁶ Depression in adolescents is an under recognized mental health problem because of their indecisiveness to disclose their feelings and seldom seeking psychiatric help.⁷ Another factors that make depression so difficult to diagnose in adolescents is the

common behaviour changes that are normally associated with the hormonal changes of this period.⁸ It has only been in recent years that the medical community has acknowledged childhood depression and viewed it as a condition which requires intervention.⁹ Care givers and teachers may not easily recognize the depressive symptoms. Biological changes during this period as well as social factors contribute in the development of depression.⁶

The current study was aimed to determine the prevalence of depression among school going adolescents of urban area of Karnataka.

METHODS

A cross sectional study was conducted among the school going adolescents of Government schools. All the high schools in the urban field practice areas of Department of Community Medicine, BIMS, Belagavi were included in the sampling frame. The calculated sample size was 254 taking the prevalence of 18.4% in a previous Indian study with absolute error 5%, 10% response failure and 95% confidence interval.¹⁰ Students of class of 9th and 10th standard were selected by using systematic sampling technique. Study period was for two months, from January 2019 to February 2019. After taking the permission from the school authority, the study was conducted. Written informed consent from the study participants and parents were taken after explaining the objective of the study. Socio-demographic data was collected by using pre-designed, pre-tested and structured questionnaire. Self-administration questionnaire of Beck's Depression Inventory II was used to assess the prevalence of depression. Ethical Approval was taken from IEC of BIMS, Belagavi.

BDI is a series of 21 item with each item rated with a set of four possible answer choices of increasing intensity (0-3) developed to measure cognitive, behavioral, affective, and somatic component of depression. The sum of all BDI item scores indicates the severity of depression. Score of 1-9 was taken as no depression, 10-19 as mild, 20-29 as moderate, 30-40 as severe, >40 very severe depression.

Statistical analysis

Data was analysed using MS-Excel 2007 and SPSS v 22. Proportion and chi-square test were applied to determine associations between depression and socio-demographic variables like age, gender, family type, socio-economic status and also with the frequency of symptoms. P value<0.05 was considered significant. Results were interpreted in tables.

Inclusion criteria

Students studying in 9th and 10th standard and willing to participate in the study were included.

Exclusion criteria

Students who did not give informed written consent, All students suffering from any kind of chronic disease and with any past history of diagnosed mental illness were excluded.

RESULTS

A total of 254 adolescents were participated in the study. Overall prevalence of depression was 62.6% and 33.46% mild grade depression which was most common among adolescents. Presence of severity of depression is shown in Table 1.

Table 1: Classification of depression among school adolescents according to BDI scale (n=254).

Grades of depression	N (%)
No depression	95 (37.40)
Mild	85 (33.46)
Moderate	57 (22.40)
Severe	13 (5.12)
Very severe	4 (1.57)

Majority 138 (54.33%) were in the age group of 15 years and only 1 (0.39%) belonged to age group of 18 years. Adolescents boys were 110 (43.31%) and 144 (56.69%) girls. Maximum were Hindu by religion 244 (96.06%). Majority of them, 160 (62.99%) lived in nuclear family followed by three generation family and least in joint family 43 (16.92%). The socio-demographic profile is shown in Table 2.

Table 2: Socio-demographic profile of study participants (n=254).

Characteristics	N (%)	
Class	9 th	127 (50)
	10 th	127 (50)
Age	15	138 (54.33)
	16	104 (40.95)
	17	11 (4.33)
	18	1 (0.39)
Sex	Male	110 (43.31)
	Female	144 (56.69)
Religion	Hindu	244 (96.06)
	Muslim	7 (2.76)
	Christian	1 (0.39)
	Others	2 (0.79)
Type of family	Nuclear	160 (62.99)
	Joint	43 (16.92)
	Three generation	51 (20.09)
Socio economic status	I	34 (13.39)
	II	89 (35.04)
	III	72 (28.34)
	IV	50 (19.69)
	V	9 (3.54)

Table 3: Association of depression with socio-demographic profile of adolescents.

Determinants	No depression N (%)	Depression N (%)	Chi-square and p value
Sex			
Male	38 (34.55)	72 (65.45)	0.676,
Female	57 (39.58)	87 (60.42)	0.411
Age (in years)			
15	56 (40.57)	82 (59.42)	4.349, 0.226
16	36 (34.62)	68 (65.38)	
17	2 (18.18)	9 (81.82)	
18	1 (100)	0	
Type of family			
Nuclear	59 (36.88)	101 (63.12)	0.446, 0.800
Joint	15 (34.88)	28 (65.12)	
3 generation	21 (41.18)	30 (58.82)	
Socio economic status			
I	14 (41.18)	20 (58.82)	4.231, 0.376
II	30 (33.71)	59 (66.29)	
III	23 (31.94)	49 (68.06)	
IV	24 (48)	26 (52)	
V	4 (44.44)	5 (55.56)	

Prevalence of depression in adolescent girls was 60.42% compared to boys 65.45%. It was more in age group of 15 years (59.42%) and those who belonged to nuclear family. There was no significant difference in the prevalence of depression with the socio-demographic associated factors (Table 3).

To understand the reported intensity of each symptom in the BDI, the frequency and percentage of each symptom and its intensity was calculated (Table 4). The result showed a high percentage for symptoms like sadness (54.98%), change in sleeping pattern (53.68%), loss of pleasure (51.52%), loss of interest (47.62%). Out of the 21 symptoms of depression, more than 50% of the students indicated not experiencing 14 symptoms in the BDI. They were pessimism, sense of failure, dissatisfaction, self-dislike, suicidal thoughts, crying spells, social withdrawal, indecisiveness, body image change, sleep disturbances, anorexia, weight loss, somatic preoccupation and loss of libido. Frequency of symptoms like loss of interest, loss of pleasure, suicidal thoughts, sadness and change in sleeping pattern were seen more in mild and moderate depression compared to severe which was statistically significant. All these symptoms were seen in the four adolescents among 254, who were in very severe depression category.

Table 4: Frequency and severity of symptoms of depression among adolescents (N=254).

Symptoms	Normal (n=95) N (%)	Mild (n=85) N (%)	Moderate (n=57) N (%)	Severe (n=13) N (%)	Very severe (n=4) N (%)	Chi-square and p value
Sadness (n=127)	22 (17.32)	46 (36.22)	43 (33.86)	12 (9.45)	4 (3.15)	54.46, <0.001*
Loss of pleasure (n=119)	15 (12.61)	40 (33.61)	47 (39.50)	13 (10.92)	4 (3.36)	58.27, <0.001*
Suicidal thoughts (n=60)	5 (8.33)	21 (35.0)	22 (36.67)	8 (13.33)	4 (6.67)	25.83, <0.001*
Loss of interest (n=110)	14 (12.73)	36 (32.73)	45 (40.91)	11 (10.0)	4 (3.64)	56.09, <0.001*
Change in sleeping pattern (n=124)	20 (16.13)	44 (35.48)	44 (35.48)	12 (9.68)	4 (3.23)	54.71, <0.001*

DISCUSSION

The overall prevalence of depression among the adolescents in this study was 62.60%. Association between sex, type of family and socio-economic status was not statistically significant. In a study conducted by Malik et al in Haryana, the prevalence of depression among school going adolescents was found to be 52.90% and 57.7% found in a study conducted by Nagendra et al in Davangere district, Karnataka.^{11,12} Mohanraj et al in Chennai reported prevalence of depression among school going adolescents as 60.8% which was almost similar to

present study.¹³ Indian studies have shown a prevalence rates ranging from 18.4% to 79.2%.^{4,6,10,14}

The commonest type of depression in present study was mild type 33.46% followed by moderate and severe type which was similar to a study by Modabber et al from Iran.⁵ The prevalence of moderate depression and severe depression was found to be 22.40% and 6.69% respectively in present study where as 11.3% and 1.8% respectively in Malik M et al study and in Mohanraj et al 19.4% and 4.3%.^{11,13} Many studies have observed that adolescent girls to be significantly more depressed than boys.⁷⁻⁹ Observations in present study was contrasting as

adolescent boys were more depressed than girls but it was not statistically significant. A study by Joseph et al also found boys slightly more depressed than girls, but there was no statistical significance.¹⁵ Suicidal ideation was significantly increased with severity of depression which was similar to Nagendra et al study.¹²

CONCLUSION

Present study shows that more than half of school-going adolescents are suffering from some degree of depression in urban area of Belgaum. In this study 29.09% of adolescents reported moderate and severe depression, so it is understood that a considerable number of adolescents are experiencing turmoil during this phase. If undetected and untreated this can affect their academic performance and result in poor coping methods and suicidal ideations. This finding emphasizes the need for screening for depressive symptomatology and identifying adolescents who need further intervention. Hence, efforts should be made to provide regular counselling by professional counsellors at school level and support from parents for the promotion of their overall health.

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