ORIGINAL RESEARCH ARTICLE

Prevalence and Determinants of Depression among Urban High School Students: A Cross-Sectional Study from North Karnataka, India

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DOI: 10.55489/njcm.170120266063

ABSTRACT

Introduction: Depression is a common mental disorder characterized by persistent sadness, loss of interest, disturbed sleep and appetite, poor concentration, and fatigue. Adolescence is a critical transitional phase marked by rapid physical, psychological, and social changes that may predispose individuals to mental health problems such as depression. This study aimed to assess the prevalence of depression and associated risk factors among urban high school students.

Methods: A cross-sectional study was conducted among 600 high school students selected using systematic random sampling. Data were collected using a pre-tested questionnaire covering sociodemographic characteristics, personal and family history, academic performance, and extracurricular activities. Depression was assessed using Beck's Depression Inventory.

Results: Of the participants, 329 (54.8%) were males and 271 (45.2%) were females. The overall prevalence of depression was 18.0%. Depression was significantly associated with parental education and occupation, living arrangements, sleep patterns, family history of serious or mental illness, recent death in the family, substance use or violent behavior among family members, academic failure, repetition of an academic year, and participation in extracurricular activities.

Conclusion: The study demonstrates a considerable burden of depression among urban high school students. Improving mental health awareness among parents, teachers, and communities, along with ensuring access to school-based counselling services, is essential for early identification and prevention of adolescent depression.

Keywords: Adolescent, Beck's depression inventory, Depression, Mental Health, Psychiatric Status Rating Scales

ARTICLE INFO

Financial Support: None declared
Conflict of Interest: The authors have declared that no conflict of interest exists.
Received: 06-10-2025, **Accepted**: 15-12-2025, **Published**: 01-01-2026
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How to cite this article: Ravichandhiran G, Mahantshetti GJ, Agadi S. Prevalence and Determinants of Depression among Urban High School Students: A Cross-Sectional Study from North Karnataka, India. Natl J Community Med 2026;17(1):35-42. DOI: 10.55489/njcm.170120266063

www.njcmindia.com | pISSN: 0976-3325 | eISSN: 2229-6816 | Published by Medsci Publications

Introduction

Depression is a common illness which is characterised by a loss of interest, sadness, feeling guilty, disrupted sleep and appetite, poor concentration and feeling tired. Depression is the foremost cause of health-related disability and a significant contributor to the overall global burden of disease.[1] Depression is observed in all age children but prevalence usually increases with age, teenagers have a significantly higher prevalence of depression when compared with younger children. Depression among adolescents and young adults has become an increasing public health concern globally. Over the past few decades, its prevalence in this age group has steadily risen.[2] Adolescent period is a vital transition phase from childhood to adulthood where rapid social, physical, hormonal, behavioural and psychological changes are noted. While emotional, behavioural, and psychological symptoms typically appear as early signs of depression, growing attention has recently focused on the long-term biological effects of depression during childhood and adolescence. These can be an initial point to numerous mental health problems like depression.[3] Adolescent depression is frequently associated with diminished academic performance, an unsupportive school environment, school dropout, maladaptive interpersonal relationships, adverse family dynamics, substance misuse, experiences of sexual abuse, excessive internet use, engagement in risky sexual behaviors, and socioeconomic challenge.[4] Depression is a significant mental health disorder in adolescents, often impacting family relationships, social interactions, and academic performance. Depression is a major factor contributing to poor academic performance. It may also be linked to learning difficulties, increased risk of school dropout, delinquent behaviour, and early or risky sexual activity.[5] They may also become involved in various anti-social behaviours, including drug or substance misuse and theft. At times, they may even develop suicidal thoughts.[6]

Depression may lead to thoughts of self-harm and which ultimately leads to suicide. It has been detected worldwide that 15% of adolescents and children are affected by mental health problems. It is estimated that about 1.3% of adolescents aged 10-14 years and 3.4% of those between 15- 19-years' experience depression. suicide is the 3rd leading cause of mortality in 15 to 29 years age group individuals.[7]

Mental Health Survey of India shows 13.9% prevalence of lifetime mental morbidity and prevalence of psychiatric morbidity in the age group of 13 to 17 years was 7.3%.[8] In India prevalence of depression in adolescents varied from 6.7% to 79.2% these included school students, college students and drop out's the age group of 10 to 19 years.[9] Pooled prevalence of depression in adolescents was 33.9% which included 22 studies from various parts of India. These studies reported that females, parental conflicts, older age of adolescents, poor school performance, smoking, decreased BMI (Body Mass Index), alcoholism and physical punishments in school were significantly associated with depression. In few studies done in Karnataka prevalence of depression in adolescents was 62.6%[10] and 39%[11] conducted in 2019 and 2017 respectively. These studies reported that increased age, resident school, nuclear family, students from government school, lower academic performance and lack of family support were significantly associated with depression. Male and female gender association varied from study to study.

These problems are caused majorly due to some barriers like social stigma, lack of health care professionals, inaccurate assessment, and lack of resources. So reliable state and national levels of prevalence of depression is not available and very few community-based studies have been done to assess depression among school going children. Hence this study will be undertaken to know the prevalence of depression and associated risk factors among high school students.

Methodology

A Cross - Sectional study conducted to know the prevalence of depression among 8th, 9th, and 10th standard students in all high schools in the urban field practice are of medical college. Ethical clearance [Ref no: MDC/DOME/238] was obtained from Institutional Ethical Committee, J.N. medical college, KAHER, Belagavi. Informed written consent was taken from the study participants parents/guardian. Assent was taken from the study participants as their age was less than 18 years. Privacy and confidentiality were maintained throughout the study. The Data was collected for 1 year and 6 months from 1st January 2020 to 30th June 2021. Due to covid restriction data was collected during monthly review camp conducted by the school this opportunity was used to obtain consent from parents/ guardians and assent from the participants to collect the data. Few schools were approached before and after the covid restrictions.

Sample size was calculated by taking prevalence (p) of depression as 40.8[12], q is (100-p) which was 59.2 and relative error (d) 10% of p, which was 4. The calculated sample size is 580 which was rounded off to 600.

The list of all the schools in Belagavi district was obtained from the Office of the Deputy Director of Public Instructions Belagavi (DDPI) from which all the high schools in Rukmini nagar was selected. A pilot study was conducted on 10% of the sample population (10% of 600) which was 60 high school students which were taken from another urban area of Belagavi (Ashok nagar). Permission from each school principal was obtained. Written informed consent was obtained from parents/ and assent was obtained from high school students. The questionnaire was validated and required changes were made.

Inclusion Criteria: High school students from Rukmini Nagar urban area who gave assent and their parents/ guardians gave informed consent were included in the study.

Exclusion Criteria: High school students with Known history of psychiatric illness were excluded.

Total number of high schools in Rukmini nagar are 9 and total number of students studying in 8th, 9th and 10th standard in both public and private school were 2171 from which 600 students were selected using systematic random sampling method. K= Total study population/Study sample size was 3.61. First participant was selected randomly and there after every 3rd student was included in the study till the sample size was met.

Data collection method/collection tool: Permission from Deputy Director of Public Instructions Belagavi (DDPI) and permission from all 9 high school principal was obtained before starting data collection. Totally studying in 8th, 9th and 10th standard in both public and private school were 2171 from which 600 students were selected using systematic random sampling method to prevent selection bias and sampling bias. K= Total study population/Study sample size was 3.61. First participant was selected randomly and there after every 3rd student according to admission number/ roll number of 8th, 9th and 10th standard high school students in each school were included in the study till the sample size was met. A good rapport was established with the students and their parent/guardian, written consent, and assent regarding the purpose of study was obtained. Every third student was selected using systematic random sampling and were then interviewed with the pretested predesigned questionnaire which included sociodemographic variables (i.e. age, parent's education and occupation data, socio economic status via Modified BG prasad[13], personal history, family history, academic and extra-curricular activities was obtained. Beck's Depression Inventory II was used to find the prevalence of depression standardized diagnostic tool was used to prevent measurement bias. This consist of 21 questions; each question had 4 options with minimum score of zero and maximum score of 3. Total score was calculated and score more than or equal to 17 was measured to estimate prevalence of depression.[12,14]

Statistical analysis: Data collected using the questionnaire was coded and entered in to Microsoft Excel. Data management was done in Microsoft Excel and analysed using SPSS (statistical package for social science) software version-20. The BDI-II data were categorized as depressed and nondepressed for the analysis. Data was analysed using percentages, chi square test and Fisher's exact test. Chi square test and Fisher's exact test was used to find association between depression and their risk factors. A probability value (p value) of less than 0.05 was considered as statistically significant.

RESULTS

Among the 600 participants, the mean age was 14.7 ± 1.0 years. The study population comprised 54.8% males and 45.2% females.

Table 1: Distribution of study participants according to socio-demographic variables (N=600)

Variables	Students (%)
Age group (years)	
12-14	307 (51.16)
15-17	293 (48.84)
Gender	
Male	329 (54.83)
Female	271 (45.17)
Religion	
Hindu	437 (72.83)
Muslim	135 (22.5)
Others	28 (4.67)
Type of Family	
Nuclear	443 (73.83)
Joint	146 (24.34)
Broken	11 (1.83)
Fathers Education	
Illiterate	13 (2.17)
Primary (1 - 5th)	53 (8.83)
Secondary (6 - 10th)	95 (15.83)
Pre - university college (11th &12th)	92 (15.33)
Graduate	317 (52.83)
Postgraduate	30 (5)
Mothers Education	
Illiterate	34 (5.67)
Primary (1 - 5th)	77 (12.83)
Secondary (6 - 10th)	132 (22)
Pre - university college (11th &12th)	116 (19.33)
Graduate	222 (37)
Postgraduate	19 (3.17)
Occupation of father	
Farmer	29 (4.83)
Labourer	27 (4.5)
Self-employed	197 (32.83)
Government Employee	158 (26.33)
Private Employee	183 (30.5)
Retired/Pensioner	6 (1)
Occupation of mother	
Farmer	11 (1.83)
Labourer	8 (1.33)
Self-employed	56 (9.33)
Government Employee	44 (7.33)
Private Employee	75 (12.5)
Home maker	406 (67.67)
Type of School	
Government	83 (13.83)
Private	517 (86.17)
Living situation /Staying arrangement	
With Both parents	550 (91.67)
With Mother Alone	40 (6.67)
With Father alone	5 (0.83)
With Grand parents	5 (0.83)
Socio Economic Status	
Class I	149 (24.83)
Class II	288 (48)
Class III	89 (14.83)
Class IV	55 (9.17)
Class V	19 (3.17)

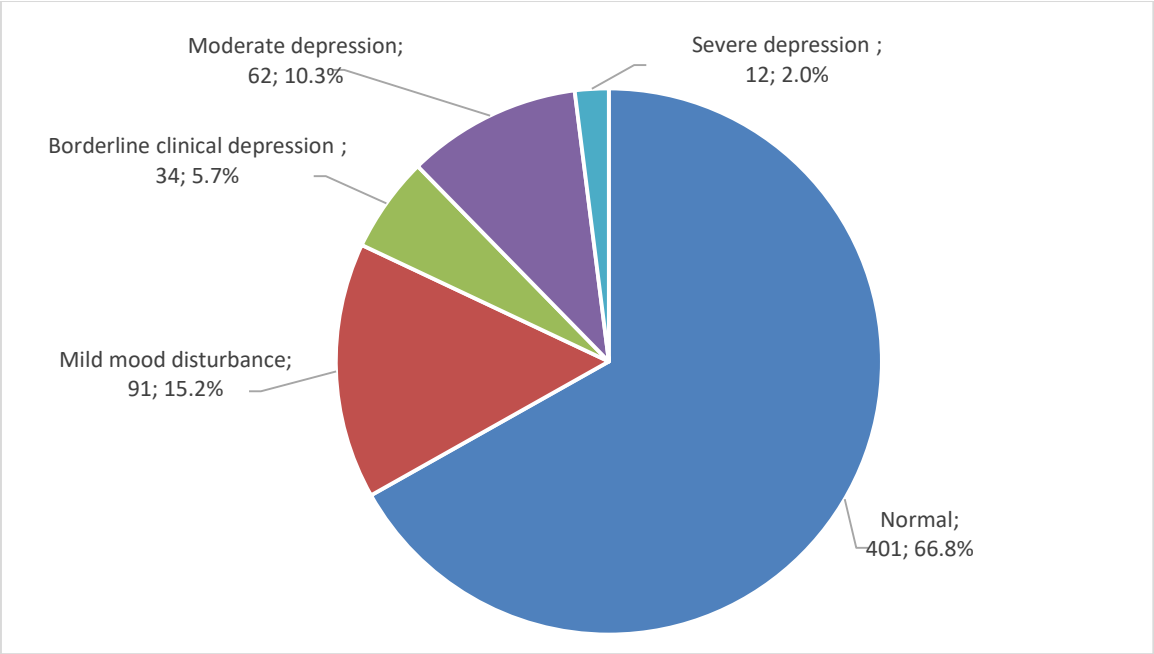

Figure 1: Prevalence of depression according to beck's depression inventory

Table 2: Association of depression with socio-demographic variables

Sociodemographic Variables	Depression		P value
	Absent (n=492) (%)	Present (108) (%)	
Age			
12 - 14 years	256 (83.4)	51 (16.6)	0.365
15 - 17 years	236 (80.5)	57 (19.5)	
Gender			
Male	261 (79.3)	68 (20.7)	0.061
Female	231 (85.2)	40 (14.8)	
Religion			
Hindu	367 (84)	70 (16)	0.114
Muslim	104 (77)	31 (23)	
Others	21 (75)	7 (25)	
Type of family			
Nuclear	362 (81.7)	81 (18.3)	0.109
Joint	122 (84.7)	22 (15.3)	
Broken	8 (61.5)	5 (38.5)	
Socio Economic Status			
Class I	121 (81.2)	28 (18.8)	0.406
Class II	244 (84.7)	44 (15.3)	
Class III	68 (76.4)	21 (23.6)	
Class IV	43 (78.2)	12 (21.8)	
Class V	16 (84.2)	3 (15.8)	

*p value of less than 0.05 - statistically significant.

A majority of the students (443; 73.8%) belonged to nuclear families, and most were Hindu by religion (437; 72.8%). Regarding parental education, 317 (52.8%) fathers and 222 (37%) mothers were graduates. Among fathers, 197 (32.8%) were self-employed, whereas most mothers (406; 67.7%) were homemakers. Based on the BG Prasad classification, nearly half of the participants (288; 48%) fell into socioeconomic Class II [Table 1]

Among 600 high school student's depression was assessed using becks depression inventory, 401 (66.83%) were normal, 91 (15.17%) had mild mood disturbance, 34 (5.66%) had borderline clinical depression, 62 (10.34%) had moderate depression, 12 (2.00%) had severe depression and none of the participants had extreme depression. Any score equal to or more than 14 was accounted to estimate the overall prevalence of depression which was obtained by the sum of participants in borderline, moderate, severe, and extreme depression. Hence the overall prevalence of depression in the present study was 18.00% (n= 108) [Figure 1].

Association of depression with sociodemographic variables like age, gender, religion, type of family, place of residence and socioeconomic class of the study participants was not found to be statistically significant in the present study [Table 2].

The study found statistically significant associations between certain parental characteristics and depression prevalence among high school students. Depression was more prevalent in students whose fathers had primary-level education (30.2%) or were retired (66.7%), and in those whose mothers were illiterate (41.2%) or labourers (62.5%). Students living with only their father or grandparents (60.0% each) showed higher rates of depression compared to those living with both parents (17.8%) or with their mother alone (10.0%). Each of these associations was statistically significant ($p < 0.05$) [Table 3].

Depression was found to be considerably higher among students with certain family-related risk factors. Those reporting a family member with a history of serious physical or mental illness showed a depression rate of 32.4%, compared to 17.1% in those without such a history, representing a significant association ($p = 0.025$).

Table 3: Association of depression with education, occupation and living situation/Staying arrangement with Parents of the study participants

Variables	Depression		P value
	Absent (n=492) (%)	Present (108) (%)	
Education of Father			
Illiterate	13 (100)	0 (0)	0.049*
Primary (1 - 5th)	37 (69.8)	16 (30.2)	
Secondary (6 - 10th)	79 (83.2)	16 (16.8)	
Pre-university	77 (83.7)	15 (16.3)	
Graduate	258 (81.4)	59 (18.6)	
Postgraduate	28 (93.3)	2 (6.7)	
Education of Mother			
Illiterate	20 (58.8)	14 (41.2)	0.006*
Primary (1 - 5th)	63 (81.8)	14 (18.2)	
Secondary (6 - 10th)	107 (81.1)	25 (18.9)	
Pre-university	93 (80.2)	23 (19.8)	
Graduate	192 (86.5)	30 (13.5)	
Postgraduate	17 (89.5)	2 (10.5)	
Occupation of Father			
Farmer	27 (93.1)	2 (6.9)	0.001*
Labourer	17 (63)	10 (37)	
Self-employed	166 (84.3)	31 (15.7)	
Government	136 (86.1)	22 (13.9)	
Employee			
Private Employee	144 (78.7)	39 (21.3)	
Retired/Pensioner	2 (33.3)	4 (66.7)	
Occupation of Mother			
Farmer	7 (63.6)	4 (36.4)	0.003*
Labourer	3 (37.5)	5 (62.5)	
Self-employed	45 (80.4)	11 (19.6)	
Government	40 (90.9)	4 (9.1)	
Employee			
Private Employee	67 (89.3)	8 (10.7)	
Home maker	330 (81.3)	76 (18.7)	
Living situation/Staying arrangement			
With Both parents	452 (82.2)	98 (17.8)	0.006*
With Mother alone	36 (90)	4 (10)	
With Father alone	2 (40)	3 (60)	
With Grandparents	2 (40)	3 (60)	

*p value of < 0.05 - statistically significant

Similarly, students who had lost a family member in the preceding year had a depression prevalence of 37.3%, much higher than the 14.9% observed in students who did not experience such bereavement (p = 0.0001). The study also noted greater rates of depression among students whose family members regularly consumed alcohol (28.8% vs. 16.5%; p = 0.011) or used tobacco in any form (26.9% vs. 16.7%; p = 0.045). Finally, the prevalence of depression was highest for students reporting a family member with a history of violent behaviour (35.2%), in contrast to 14.9% among those without such exposure, a statistically significant difference (p = 0.001). [Table 4]

Depression was significantly more common among students who slept less than 6 hours (22.9%) or more than 8 hours (22.2%), with the lowest rates observed in those sleeping 6-8 hours (13.6%) (p = 0.018). Students who repeated an academic year had a much higher prevalence of depression (41.9%) compared to those who did not (16.2%) (p = 0.0001). Similarly, those who failed any subject in the past year showed greater depression rates (43.2%) than those who did not fail (14.1%) (p = 0.0001). Depression was also higher among students not participating in sports activities (29.5%) compared to those involved in sports (15.6%), and this association was statistically significant (p = 0.001). [Table 5].

In this analysis, variables with a p-value below 0.25 in the initial univariate screening were advanced into the multivariate logistic regression model. The adjusted odds ratios (aOR), 95% confidence intervals, and p-values for each factor, estimating their independent associations with depression after controlling for other included variables. The findings indicate that significant predictors of depression included severe illness of a family member (aOR 3.09, 95% CI: 1.19-8.03), recent bereavement (aOR 3.84, 95% CI: 2.19-6.81), family tobacco use (aOR 2.29, 95% CI: 1.08-4.86), violent behavior in the home (aOR 2.33, 95% CI: 1.12-4.88), repeating a school year (aOR 3.86, 95% CI: 1.87-7.99), and absence of regular sports participation (aOR 2.64, 95% CI: 1.53-4.51). Other variables, including gender, type of family, parental education and occupation, living arrangement, and family member alcohol use, did not show a statistically significant relationship with depression in the fully adjusted model; their 95% confidence intervals included the null value and *p* values were greater than 0.05. [Table 6].

Table 4: Association of depression with various family members history

History among/by family members	Depression		P value
	Absent (n=492) (%)	Present (108) (%)	
Severe illness	23 (67.6)	11 (32.4)	0.025*
Death	52 (63.7)	31 (37.3)	0.0001*
Alcohol usage	52 (71.2)	21 (28.8)	0.011*
Tobacco usage	49 (73.1)	18 (26.9)	0.045*
Violent behaviour	35 (64.8)	19 (35.2)	0.001*

*p value of < 0.05 - statistically significant

Table 5: Association of depression with Sleep pattern of the study participants

Variables	Depression		P value
	Absent (n=492) (%)	Present (108) (%)	
Sleep			
<6 hours	84 (77.1)	25 (22.9)	**0.018***
6 - 8 Hours	261 (86.4)	41 (13.6)	
>8 hours	147 (77.8)	42 (22.2)	
Repeated one year	25 (58.1)	18 (41.9)	**0.0001***
Failed in any subject in last year	46 (56.8)	35 (43.2)	**0.0001***
Sports Participation	418 (84.4)	77 (15.6)	**0.001***

*p value of < 0.05 - statistically significant

Table 6: Multivariate logistic regression of factors associated with Depression among the study participants:

Risk factors	cOR (95% CI)	P Value	aOR (95% CI)	P Value
Gender Male (ref Female)	1.51 (0.93 - 2.31)	0.062	1.45 (0.87 - 2.41)	0.144
Nuclear family (ref Joint family)	1.07 (0.66 - 1.74)	0.761	1.21 (0.68 - 2.092)	0.519
Father educated up to School Level (10th)@	1.18 (0.75 - 1.88)	0.47	0.81 (0.42 - 1.52)	0.505
Mother educated up to School Level (10th)#	1.53 (1.01 - 2.33)	0.046*	1.37 (0.78 - 2.42)	0.266
Self employed of Father (Ref Govt & Pvt Employee)	1.02 (0.67 - 1.55)	0.93	1.09 (0.64 - 1.84)	0.739
Working Mother (ref Homemaker)	0.86 (0.55 - 1.35)	0.51	0.96 (0.57 - 1.59)	0.871
Living with both parents	0.86 (0.42 - 1.79)	0.71	1.32 (0.55 - 3.15)	0.521
Severe illness to family member	2.31(1.09 - 4.91)	0.029*	3.09 (1.19 - 8.03)	0.021*
Death of family member	3.41(2.05 - 5.65)	0.0001*	3.84 (2.19 - 6.81)	0.0001*
Alcohol usage by family member	2.04 (1.17 - 3.56)	0.011*	1.09 (0.55 - 2.21)	0.797
Tobacco usage by family member	1.81 (1.01 - 3.25)	0.045*	2.29 (1.08 - 4.86)	0.031*
Violent behaviour by family member	2.78 (1.53 - 5.09)	0.001*	2.33 (1.12 - 4.88)	0.025*
Repeated one year	3.74 (1.96 - 7.13)	0.001*	3. 86 (1.87 - 7.99)	0.0001*
Sports Participation	2.27 (1.41 - 3.69)	0.001*	2.64 (1.53 - 4.51)	0.0001*

*P <0.05; considered statistically significant; aOR- Adjusted Odds Ratio; CI- Confidence interval; cOR- Crude Odds Ratio; Ref – Reference
@Ref Education of father - Higher Education (PU and above)
Ref Education of Mother - Higher Education (PU and above)

Discussion

This cross-sectional study conducted in an urban field practice area found that 18% of high school students experienced depression. Significant associations were observed with factors including parental education and occupation, living arrangements, sleep habits, family history of serious health or mental conditions, recent family bereavement, substance use and violence within the family, academic challenges such as repeating a year or failing subjects, and lack of involvement in sports. These results illustrate the complex array of influences on adolescent depression in this setting. The forthcoming discussion will relate these findings to those of other studies assessing depression among adolescents, to better contextualize the prevalence and contributing factors observed.

In our study among 600 high school students, the mean age was 14.7 ± 0.96 years. 307 (51.16%) were in the 12-14 years age group and 293 (48.84%) were in 15 - 17 years age group. Similarly, a study conducted in Mangalore showed that mean age of the participants was 14 ± 0.9 and majority of the participants were belonging to age group of 12-15 years.[12] Another study conducted in Barabanki district, Uttar Pradesh the mean age of participants was 14.3 ± 3.1 and majority of the participants were in the age group 10 - 13 years.[15] When comparing our studies region distribution, a study conducted by Jha et., in 2017 revealed similar results with maximum participants (79.4%) were Hindus followed by (16.4%) Muslims and least in (4.2%) others which included (Buddhism, Jainism, etc.) and maximum number of participants (61.5%) lived in a nuclear family.[16] In the socioeconomical aspect most participants belonged to class II Modified B. G. Prasad's Classification, a study conducted in an urban area of Karnataka showed majority of the participants (35.04%) belonged to class II and least participants (3.54%) belonged to class V, like our finding.[10]

The overall prevalence of depression was calculated by adding all the study participants in borderline, moderate, severe, and extreme depression. The overall prevalence of depression in the present study was 18% (n= 108). Prevalence of psychiatric morbidity in the age group of 13 to 17 years was 7.3% in the national mental health survey which is on the lower side when compared to our study.[8] Studies conducted various places in India revealed prevalence of depression to be 40.8% in Mangalore[12], 18.7% in Barabanki Uttar Pradesh[15], 49.2% in Bihar[16], 34.2% in Nadia west Bengal[17], 13%, in Hyderabad Telangana[18], and 71.3% in Bhopal Madhya Pradesh[19].

In a study conducted in Mangalore and Bhopal Madhya Pradesh revealed that depression was not associated with education of father/ head of family of the participants with p value (0.096) and (0.851) respectively.[12,19] Prevalence of depression was associated with education and occupation of mother among the respondents and the association was statistically significant with p value (0.007) and (0.003) respectively in a study done in Bhopal, Madhya Pradesh.[19] Prevalence of depression was more among the study participants who were living with father alone or with grandparents (60.0% &60.0%), followed by participants living with both parents (17.8%) and least was seen participants living with mother alone (10.0%) and the association was statistically significant (p value = 0.003) but the multivariate analysis was not statistically significant. Similarly, in a study conducted in Nadia west Bengal it was observed that odds of depression were 6.3 times more in participants living with either one of parents or guardians when compared with staying with both and the association was statistically significant with p value (0.004).[17] In the present investigation, family adversity including severe illness (aOR = 3.09), death

(aOR = 3.84), tobacco use (aOR = 2.29), and violent behavior (aOR = 2.33) among family members was strongly linked to higher odds of adolescent depression, underscoring the critical influence of familial challenges on mental health outcomes. A study conducted in Bangalore, Karnataka revealed that depression was significantly associated with family member with history of serious medical or mental illness with p value (0.013) and participants who experienced death of family member in the past year with p value (0.016).[11] Similarly to our study, a study conducted in Chandigarh revealed that depression was significantly associated with family members who consumed alcohol regularly with p value (0.001), who consumed tobacco regularly with p value (0.014) and participants who had a family member with history of violent behaviour with p value (0.018).[20]

In this study, academic challenges such as repeating a school year (aOR = 3.86) were significantly associated with higher odds of depression among adolescents, highlighting the impact of educational stress. Similarly, lack of sports involvement (aOR = 2.64) was a notable risk factor, underscoring the importance of physical activity and structured engagement for adolescent mental health. In a study conducted in south Karnataka was observed that depression was significantly associated with participants who were not involved in sports activities with p value (0.001) and depression was not significantly associated in participants who repeated an academic year with p value (0.065) and participants who failed in any subject in the past academic year with p value (0.514) this disparity might be seen because all the participants were from government or government aided school.[11]

Limitations of the study

The cross-sectional design of this study limits the ability to establish temporal or causal relationships between depression and the identified associated factors. Depression was assessed using a self-reported screening tool, which may be subject to reporting bias and may not equate to a clinical diagnosis. The study was conducted in a single urban field practice area, potentially limiting the generalizability of findings to rural settings or other regions. Additionally, exclusion of students with known psychiatric illness and absence of qualitative exploration of psychosocial stressors may have led to underestimation or incomplete understanding of the burden of adolescent depression.

Conclusion

This study found that nearly one-fifth of urban high school students experienced depression, indicating a substantial mental health burden in this age group. Depression was independently associated with family-related adversities such as serious illness, recent bereavement, tobacco use, and violent behavior, as well as academic challenges and lack of sports participation. The findings emphasize the multifactorial determinants of adolescent depression and highlight the importance of early identification through supportive family environments, school-based mental health screening, and promotion of healthy academic and extracurricular engagement.

Acknowledgement: We thank management and Staffs of all high schools and also to all students who participated in the study. The author is grateful to authors/editors/publishers of all those articles, journals, and books from where the literature for this article has been reviewed and discussed.

Individual Authors' Contributions: GR contributed to the conception of the study, study design, data collection, data analysis and interpretation, and manuscript preparation. **GJM** was involved in the study conception and design, data analysis and interpretation, and manuscript preparation. **SA** contributed to data collection, data analysis and interpretation, and manuscript preparation.

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