

PREVALENCE OF DEPRESSION AMONG ADOLESCENTS

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Abstract:

Depression is a common mental disorder marked by persistent sadness, loss of interest, and an inability to function in daily life for at least two weeks. Adolescents are more susceptible to depression due to hormonal changes, social pressures, family dynamics and influence of social media. **Aim:** The aim of study was to determine the prevalence of depression among adolescents of 13-19 years using the Beck's Depression Inventory Scale II. This was a cross-sectional study conducted over one year period among 350 adolescents aged 13 to 19 years from Solan district. **Results:** Among study subjects, 40.9% had no depression, 39.7% showed mild symptoms, while 19.4% experienced moderate to severe depression, highlighting the need for potential intervention. The analysis showed that joint family type was significantly associated with depression among adolescents ($p=0.013$), while factors like age, gender, residential type and socioeconomic status did not have statistically significant correlations. Adolescents belonging to upper middle class had a higher prevalence of moderate and severe depression ($p=0.018$). **Conclusion:** This study highlights that while the majority of adolescents experience no or mild depression, a notable portion is affected by moderate to severe depression, underscoring the need for targeted interventions.

Key Words: Adolescents, Depression, Beck's Depression Inventory Scale II

INTRODUCTION

Depression is a major mental health problem that impacts people of all ages, with a notable increase among teenagers. In India, where the youth population is expanding quickly, adolescent depression is a serious public health issue. Adolescence is a pivotal stage characterized by physical, emotional, and social changes, which can increase the risk of developing mental health conditions like depression.

The World Health Organization identifies depressive disorders as a priority mental health issue in adolescence due to their high prevalence, recurrence, and potential to cause serious complications and impairment.¹ Globally, the lifetime prevalence of major depression during adolescence is between 15% and 20%.² India accounts for 21% of the world's adolescent population, with one in six children affected by a mental disorder.³

Depression is the leading contributor to the global disease burden for individuals aged 15-45. By the end of 2020, it was projected to rank second in disability-adjusted life years (DALY) across

all ages and genders. Additionally, depression is a significant risk factor for suicide, which is one of the top three causes of death among those aged 15-35.³

Depression is characterized by a low mood and lack of interest in activities, impacting a person's thoughts, emotions, behaviour, and physical health. It is a group of brain disorders with diverse symptoms, reflecting changes in cognitive, psychomotor, and emotional functions. Depression has various origins, complex genetics, and unclear neurobiology. Several brain regions, including the forebrain, hippocampus, amygdala, limbic system, and medial prefrontal cortex, are involved in depression. The two widely recognized classification systems are the Diagnostic and Statistical Manual (DSM-IV) by the American Psychiatric Association and the International Classification of Disease and Related Health Problems (ICD-10) by the World Health Organization.⁴

Adolescent depression is linked to poor academic performance, dropping out of school, strained family relationships, substance abuse, and risky sexual behavior.⁵ It is often an under-recognized mental health issue in adolescents due to their reluctance to share their feelings and their infrequent seeking of psychiatric help.⁶ Another challenge in diagnosing depression in adolescents is that typical behavioural changes during this time are often attributed to hormonal shifts.⁷ Only in recent years has the medical community recognized childhood depression as a condition requiring intervention.⁸ Caregivers and teachers may also struggle to identify depressive symptoms, and both biological and social factors contribute to its development.⁵

In India, studies utilizing the Beck Depression Inventory-II (BDI-II) have shown varying rates of adolescent depression due to factors like socioeconomic status, academic stress, and differences between urban and rural areas. Despite increasing awareness, mental health is still stigmatized in many regions, complicating efforts to tackle youth depression.⁹ Therefore, using standardized tools like the BDI-II is crucial to better understand the extent of depression and create targeted interventions and support systems.

The BDI-II, a widely used self-administered 21-item questionnaire, effectively assesses depression in adolescents by measuring symptom severity, from mild to severe.¹⁰ Its self-administered format allows adolescents to reflect on their emotions, providing a quick and accessible assessment tool for both clinical practice and research.

Research on the occurrence of depression is essential to identify and address the unmet needs of teenagers, especially with the rising prevalence of the condition in today's age of the internet, social media, and rapidly changing environments.¹¹ Such studies provide insights into the mental health of adolescents and help guide the planning and development of appropriate services and treatments.¹²

The current study aims to assess the prevalence of depression among adolescents using the self-reported Beck Depression Inventory-II (BDI-II).

METHODS

A cross-sectional study was conducted among the adolescents of age 13 to 19 years from schools and colleges of Solan district, Himachal Pradesh. Drawing from a previous study that identified a 35% prevalence of depression in adolescents, the required sample size for the current study was calculated to be 350 participants, with a 5% margin of error and a 5% significance level. As a

result, the study will utilize a sample size of 350 individuals. The study was conducted over a one-year period, from September 2023 to August 2024. Written informed consent was obtained from both the participants and their parents after explaining the study's objectives. Socio-demographic information was gathered using a pre-designed, pre-tested, and structured questionnaire. The prevalence of depression was assessed through self-administration of Beck's Depression Inventory II. Ethical approval for the study was granted by the Institutional Ethics Committee (IEC) of MMMCH, Solan.

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, behavioural, affective, and somatic component of depression. The sum of all BDI item scores indicates the severity of depression. Score of 1-10 was taken as no depression, 11-20 as mild, 21-30 as moderate, 31- >40 as severe depression.

Statistical analysis

The data was analyzed using MS Excel 2007 and SPSS version 21. Proportions and chi-square tests were employed to explore the associations between depression and various socio-demographic factors, including age, gender, family type, socio-economic status, and symptom frequency. A p-value of less than 0.05 was considered statistically significant. The findings were presented in tables.

Inclusion criteria

Adolescents aged 13 to 19 who were attending schools or colleges in Solan were enrolled in the study.

Exclusion criteria

Students who did not provide written informed consent, those with any chronic disease, and those with a history of diagnosed mental illness, such as cerebral palsy or hemiparesis, were excluded. Additionally, children with developmental delays, mental retardation, or physical disabilities were not included in the study.

Results

The study included a total of 350 participants. In terms of age distribution, 16 participants (4.6%) were 13 years old, 136 participants (38.9%) were between 14-16 years old, and the majority, 198 participants (56.5%), were aged between 17-19 years. Regarding gender, 123 participants (35.1%) were male, while 227 participants (64.9%) were female.

When considering family type, 131 participants (37.4%) belonged to joint families, while 219 participants (62.6%) came from nuclear families. In terms of residential type, 218 participants (62.2%) lived in urban areas, and 132 participants (37.8%) were from rural areas.

Finally, the socioeconomic status of the participants showed that 45 participants (12.9%) belonged to the upper class, 247 participants (70.5%) were from the upper middle class, and 58 participants (16.6%) were from the lower middle class. The socio-demographic profile is shown in Table 1.

Table 1: Socio-demographic profile of study participants (n= 350)

Characteristics		N (%)
Age	13 years	16 (4.6)
	14 -16 years	136 (38.9)
	17 -19 years	198 (56.5)
Gender	Male	123 (35.1)
	Female	227 (64.9)
Family Type	Joint	131 (37.4)
	Nuclear	219 (62.6)
Residential Type	Urban	218 (62.2)
	Rural	132 (37.8)
Socioeconomic Status	Upper Class	45 (12.9)
	Upper Middle	247 (70.5)
	Lower Middle	58 (16.6)

The classification of depression among 350 adolescents, based on the Beck Depression Inventory (BDI) scale, showed that a significant portion of the population fell into the "No depression" category, with 143 individuals (40.9%). A nearly equal number, 139 adolescents (39.7%), exhibited mild depression, indicating that a substantial group still experiences some depressive symptoms. Moderate depression was identified in 45 individuals (12.9%), while a smaller group of 23 adolescents (6.5%) suffered from severe depression. These findings highlight that while the majority of the population either has no depression or only mild symptoms, a notable portion is experiencing moderate to severe depressive states, which may require intervention. Presence of severity of depression is shown in Table 2.

Table 2: Classification of depression among adolescents according to BDI scale (n= 350)

Grades of depression	N (%)
No depression	143 (40.9)
Mild	139 (39.7)
Moderate	45 (12.9)
Severe	23 (6.5)

The analysis of depression among 350 adolescents in relation to their socio-demographic profile showed that certain factors were associated with varying rates of depression. A significant finding was the association between family type and depression, where adolescents from joint families

experience a significantly higher rate of depression (68%) compared to those from nuclear families (53.9%), with the difference being statistically significant ($p = 0.013$). Residential type also showed that adolescents from rural areas had a higher prevalence of depression (63.6%) than their urban counterparts (56.4%), though this difference was not significant ($p = 0.223$).

Finally, socioeconomic status does not seem to have a significant impact on depression rates, as similar levels of depression were observed across upper-class (55.6%), upper-middle-class (59.5%), and lower-middle-class (60.3%) groups ($p = 0.866$). In summary, while family type showed a significant association with depression, other factors such as age, gender, residential type, and socioeconomic status did not exhibit statistically significant correlations as in Table 3.

Table 3: Association of depression with socio demographic profile of adolescents (n= 350)

Determinants	Total	No Depression N (%)	Depression N (%)	p value
Age				
13 years	16	9 (56.2)	7 (43.8)	0.325
14 – 16 years	136	58 (42.6)	78 (57.4)	
17 – 19 years	198	76 (38.4)	122 (61.6)	
Gender				
Male	123	55 (44.7)	68 (55.3)	0.334
Female	227	88 (38.7)	139 (61.3)	
Family Type				
Joint	131	42 (32)	89 (68)	0.013
Nuclear	219	101 (46.1)	118 (53.9)	
Residential Type				
Urban	218	95 (43.6)	123 (56.4)	0.223
Rural	132	48 (36.4)	84 (63.6)	
Socioeconomic Status				
Upper Class	45	20 (44.4)	25 (55.6)	0.866
Upper Middle	247	100 (40.5)	147 (59.5)	
Lower Middle	58	23 (39.7)	35 (60.3)	

The association between sociodemographic factors and depression severity among a sample of 207 individuals was calculated in Table 4.

The highest percentage of mild depression was observed in the 14–16year group (70.5%), followed by the 17–19year group (65.6%), and the 13year group (57.1%). While there was variation in depression severity across the age groups, with moderate and severe depression being slightly higher in the older age groups, the association between age and depression was not statistically significant ($p = 0.115$).

In terms of gender, both males and females displayed similar trends in depression severity, indicating that gender may not be a key determinant in depression severity within this sample.

Regarding family type, participants from nuclear families had a higher proportion of mild depression (72.1%) than those from joint families (60.7%). Conversely, severe depression was more prevalent among individuals from joint families (14.6%) compared to those from nuclear families (8.4%). However, this association between family type and depression was not statistically significant ($p = 0.243$).

Socioeconomic status showed a statistically significant association with depression severity ($p = 0.018$). Individuals from the upper class had the highest proportion of mild depression (72%) and the lowest proportion of severe depression (4%). Conversely, individuals from the upper middle class showed the highest proportion of severe depression (12.9%). The lower middle class had a higher prevalence of mild depression (74.3%) and a relatively lower prevalence of severe depression (8.6%) as shown in Table 4.

Table 4: Association of sociodemographic factors with severity of depression (n= 207)

Determinants	Total	Depression N (%)			p value
		Mild Depression N (%)	Moderate Depression N (%)	Severe Depression N (%)	
Age					
13 years	7	4 (57.1)	2 (28.6)	1 (14.3)	0.115
14 – 16 years	78	55 (70.5)	14 (17.9)	9 (11.6)	
17 – 19 years	122	80 (65.6)	29 (23.8)	13 (10.6)	
Gender					
Male	68	48 (70.6)	16 (23.5)	4 (5.9)	0.468
Female	139	91 (65.5)	29 (20.9)	19 (13.6)	
Family Type					
Joint	89	54 (60.7)	22 (24.7)	13 (14.6)	0.243
Nuclear	118	85 (72.1)	23 (19.5)	10 (8.4)	
Residential Type					
Urban	123	90 (73.1)	22 (17.9)	11 (9)	0.764
Rural	84	49 (58.3)	23 (27.4)	12 (14.3)	
Socioeconomic Status					
Upper Class	25	18 (72)	6 (24)	1 (4)	0.018
Upper Middle	147	95 (64.6)	33 (22.5)	19 (12.9)	
Lower Middle	35	26 (74.3)	6 (17.1)	3 (8.6)	

DISCUSSION

The overall prevalence of depression among the adolescents in this study was 59.1%. Prevalence of depression among 350 adolescents, based on the BDI scale, is as follows:

- Mild depression: 39.7% (139 adolescents)
- Moderate depression: 12.9% (45 adolescents)
- Severe depression: 6.5% (23 adolescents)

The BDI scale assessment of 350 adolescents shows that while the majority experience no or mild depression (80.6%), a notable portion (19.4%) suffers from moderate to severe depression, highlighting the need for focused mental health support for those at higher risk. This study had a predominance of older adolescents, females, nuclear families, urban residents, and participants from upper middle-class backgrounds. Analysis highlights that family type is the only socio-demographic factor significantly associated with depression among adolescents, with those from joint families being more likely to experience depression. Although age, gender, residential type, and socioeconomic status show variations in depression rates, these differences are not statistically significant, suggesting that other factors may be more influential in determining adolescent depression in this population.

The studies conducted by Malik et al. in Haryana and Nagendra et al. in Davangere district, Karnataka, reported prevalence rates of depression among school-going adolescents at 52.90% and 57.7% respectively^{13 14}. Similarly, Mohanraj et al. in Chennai found a prevalence rate of 60.8%, which closely aligns with the findings of the present study.¹² Across various Indian studies, the prevalence of depression among adolescents has shown a wide range, with rates varying from 18.4% to as high as 79.2%, reflecting significant variability in the burden of depression across different regions and populations.¹⁵

Among the sociodemographic factors examined—age, gender, family type, residential type, and socioeconomic status—only socioeconomic status showed a statistically significant association with depression severity ($p = 0.018$), with individuals from the upper class experiencing the least severe depression. Although there are variations in the distribution of mild, moderate, and severe depression across age groups, gender, family type, and residential type, these associations were not statistically significant, suggesting that these factors may not be strong predictors of depression severity in this sample. In the study by Malik et al., 11.3% of adolescent girls and 1.8% of boys were reported to be depressed, while Mohanraj et al. observed higher rates of 19.4% among girls and 4.3% among boys.^{12 13} These findings are consistent with numerous other studies, which have frequently observed that adolescent girls tend to experience significantly higher rates of depression compared to boys, suggesting a gender-based disparity in the prevalence of depression among adolescents. A study by Joseph et al. also observed that boys were slightly more depressed than girls, but the difference was not statistically significant.¹⁶ Suicidal thoughts were notably higher with increased depression severity, which aligns with the findings of the Nagendra et al. study.¹⁴ These findings emphasize the importance of considering family dynamics and socioeconomic factors in addressing adolescent depression. Findings underscore the necessity of screening for depression symptoms and identifying adolescents who require additional intervention. As a result, regular counselling by trained professionals in schools, along with parental support, should be prioritized to enhance adolescents' overall health and well-being.

CONCLUSION

This study highlights that while the majority of adolescents experience no or mild depression, a notable portion is affected by moderate to severe depression, underscoring the need for targeted

interventions. The only significant factor associated with depression prevalence was family type, with higher rates seen in joint families. Socioeconomic status, on the other hand, showed a statistically significant association with depression severity, with those from the upper middle class experiencing the highest rates of severe depression.

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