# Original Research Paper

## Pediatrics

# STUDY OF DEPRESSION AMONG CHILDREN IN A TERTIARY CARE HOSPITAL – OUTPATIENT AND INPATIENT CASES

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**ABSTRACT**

**Background:** Depression is a debilitating disease which is caused by social and environmental factors in addition to genetic factors[1]. Just 40 years ago, many physicians doubted the existence of significant depressive disorders in children. However, a growing body of evidence has confirmed that children and adolescents not only experience the whole spectrum of mood disorders but also suffer from the significant morbidity and mortality associated with them[4].

It is very important to prevent the ill effects of depression on one's educational attainment and career through early detection and proper interventional measures[3].

Depression, the most common mental disorder which accounts for 9.7% years lived with disability in the 2010 Global Burden of Disease study[4,5]. Depression related disability, compounded by lack of access to care impacts on the social and physical health. Depression can affect the socialization, family relations, and performance at school of children and adolescents, often with potentially serious long-term consequences.

Prevalence estimates of depression in India have varied widely depending on the assessment tools used and the community's socio-demographic profile[4,6,7]. Robust evidence from India and other low and middle income countries links socioeconomic deprivation with increased risk of depression[4,8,9]. Other groups shown to be at higher risk for depression in India are women, the elderly, urban dwellers and people who are divorced or widowed[10,11,12].

People with depression in India report distress primarily as unexplained somatic symptoms, and usually seek help from primary care rather than specialist mental healthcare providers[4].

There is an urgent need to understand the burden of disease in children and adolescents. Simultaneously, ongoing reflection is needed about when mental distress becomes a disorder because untreated depression can cause long term consequences[4].

**Materials and Methods:** This was a cross-sectional questionnaire study conducted on 80 children above 10 years of age. Children were assessed using the standard Beck Depression Inventory (BDI) used for screening depression. Data was then analyzed using SPSS software.

**Results:** The results showed that majority of the children had no depression and out of those children with depression (12.5%), majority (10%) had mild degree of depression. No children in our study had severe or profound depression.

**Conclusion:** Depression is a major problem in this developing era. Hence children should be routinely screened and assessed since it can cause long term consequences if not diagnosed and treated appropriately.

**KEYWORDS :** Depression, BDI

## INTRODUCTION

Depression is a common serious global health care problem among children and adolescents in today's society. Based on the WHO reports, mental disorders are the fourth major health problem in the world and among the mental disorders, the greatest disability and handicap in the world is related to depression. Depression is one of the most common psychiatric disorders such that some considered it as a natural reaction to tragedies and some see it as a major disease. Depression can affect everyone and in addition to its hereditary aspects, is also caused by social and environmental factors[1].

The first episode of depressive illness is generally identified in late childhood or early adolescence. Children and adolescents who meet the criteria of depressive illness are especially prone to co-morbid mental disorders including emotional problems which has significant impact on their psycho-social-emotional and mental health status[13]. It is seen to be associated with later interpersonal difficulties, early parenthood, impaired school performance, unemployment, and other mental disorders and substance use disorders[14]. Depression is associated with reduced energy and passion, feeling guilty, lack of concentration, poor appetite and thoughts of death and suicide. It is accompanied with changes in activity level, cognitive abilities, speaking, sleep and other biological rhythms. Failure to detect these disorders unfortunately leads to increase in the psychological morbidity with unwanted effects throughout their careers and lives and has long term consequences[3].

Adolescents with depression are at risk for increased hospitalizations, recurrent depressions, psychosocial impairment, alcohol abuse, and antisocial behaviors as they grow up. Of course, the most devastating outcome of concern for adolescent depression is suicide, the third leading cause of death among older adolescents[2]. Co- relational and longitudinal studies have shown that depression is associated with higher rates of smoking, alcohol abuse, unhealthy eating, and infrequent exercise[2].

Unfortunately children and adolescents are not routinely screened for mental illness and this in-turn leads to its under-diagnosis. Depression is not an exclusive disease, and appears in both sexes and in all age groups and races. Its prevalence is nearly double in females and has been reported to be in 10-64% among young people[1,15,16]. Across the globe, the lifetime prevalence for major depression in adolescence is 15% to 20%[17] with a recurrence rate of 60–70%[18] often resulting in suicide, school drop- out, pregnancy, substance abuse, progressing in to adult depression[17,19,20] functional disability and significant impairment[17,21].

Depressive disorders are identified by the WHO as a priority mental health disorder of adolescence because of its high prevalence, recurrence and ability to cause significant complications and impairment. Recognizing adolescent depression becomes a responsibility of paediatricians[17]. However, most of the depressed adolescents are not diagnosed in primary-care settings[17,22]. Studies have shown that usual care by primary care physicians fails to recognize 30-50% of depressed patients[2,23]. Because patients in whom depression goes unrecognized cannot be appropriately treated, systematic screening has been advocated as a means of improving detection, treatment, and outcomes of depression[2].

Children and adolescents coming from poor educational and economic background associated with higher rates of unemployment had significant rates of mental disorders. A continued focus on early

intervention and suicide prevention–must be central platforms of the service systems that we build in the health, education and welfare.

Recognizing teenagers with depression is the first step to improved depression management. The clinical spectrum of the disease can range from simple sadness to a major depressive or bipolar disorder[2,24]. Childhood depression, like the depression of adults, can encompass a spectrum of symptoms ranging from normal responses of sadness and disappointment in stressful life events to severe impairment caused by clinical depression that may or may not include evidence of mania[2,25].

Routine screening and assessment for depression is the key towards early detection and management and such screening programs have been initiated in some school and medical settings. Following identification and assessment, PCPs (Primary care Providers) who have the potential to improve the recognition and management of depression in young people provides general initial management and thus has lasting individual and societal benefits[13].

Screening for psychiatric co-morbidities (including substance use disorders, anxiety disorders, attention-deficit/ hyperactivity disorder, and bipolar disorder) is also important in the assessment of pediatric depression , and may guide management, as well as influence treatment outcomes. School factors are also considered as a major category according to the teachers' interviews[26].

Early detection and treatment of risk factors reduce the presence of depression and complications considering that depression which begins in childhood will be more severe in the adulthood. Therefore, the implementation of strategies for early detection and identification help improve the future quality of life in children with risk factors and prevent the ill effects of depression on one's educational attainment and career[14].

No perfect depression screening or assessment tool exists. Optimal diagnostic procedures should combine the use of depression-specific screening tools as diagnostic aids buttressed by follow-up clinical interviews in which one obtains information from other informants (e.g., parents) and reconciles discrepant information to arrive at an accurate diagnosis and impairment assessment before treatment[2].

Although several depression screening instruments are available, their psychometric properties in a primary-care paediatric setting in the Indian context have not been studied. Beck Depression Inventory (BDI) has excellent psychometric properties across clinical and non-clinical populations in other countries[17,27]. BDI has also been extensively validated among the adolescent population elsewhere[17,28]. BDI is a series of questions developed to measure the intensity, severity, and depth of depression in patients with psychiatric diagnoses. The sum of all BDI item scores indicates the severity of depression. Score of 12 and above is taken as Depression[2].

India's highly inequitable distribution of mental health resources means at least 90% of people with mental disorders are undiagnosed and untreated. There are also huge disparities in access to mental health services particularly for people in rural areas[2]. Barriers to help-seeking include unavailability of services, poor quality of the majority of existing services, lack of knowledge about mental illness, and fear of stigma and discrimination[2].This study was undertaken to find out the prevalence and associated factors of depression among children and adolescents and to prove the potential of depression screening to improve the recognition and management of depression in children. By this depression screening, early treatment can be initiated and this can improve the outcomes and reduce the presence of complications in children.

## METHODS
A cross sectional questionnaire study was conducted in the department of Pediatrics at Yenepoya Medical College Hospital, Mangalore during the study period of October 2017 to December 2017. Institutional Ethical Committee clearance was taken and an informed consent was obtained from the parents and the child before the study. They were given free choice to enroll or refuse in the study. A pretested questionnaire was supplied among children and parents which were to be filled by them and these were then collected.

Becks Depression Inventory, the tool used to screen for depression is a 21 item, self rated inventory with each item rated with a set of 4 possible answer choices and a score of 0 to 3 for each item. The degrees of depression based on the questionnaire instructions were classified as: score 0-9 (no depression), 10-18 (mild), 19-29 (moderate), 30-40(severe) and score >40 (profound depression). The minimum and maximum score was 0-63[1].

The self-administered questionnaire was used to collect information regarding age group, gender, social factors like alcohol use/drug addiction, family problems, family history of depression, and staying away from home. Any subject with an alcohol intake at least once in the past 12 months was considered as alcohol user for the purpose of this study. The family problem was assessed by the question that whether the family members were currently having any problem that worries the subject or not. Drug addiction was defined as repeated use of any psychoactive substance including alcohol, to the extent that the user is periodically or chronically intoxicated, shows a compulsion to take the preferred substance, and has a great difficulty in voluntarily ceasing or modifying substance use. Family history of depression was assessed based on earlier diagnosis among first or second degree relatives[1].

**Participants**: This study was conducted on 80 children.

**Inclusion criteria**: All stable children above 10 years of age including IP and OP.

**Exclusion criteria**: Not willing for the study, not stable, less than or more than 10 years, any past history of diagnosed mental illness or other chronic illness on medication.

**Statistical Analysis**: Data was analyzed using SPSS software.

## RESULTS
Out of the total 80 children enrolled in the study, 35 (43.8%) were males and 45(56.2%) were females. 88.5% of males and 86.6% of females had no depression while 8.5% of males and 11.1% of females had mild depression. 1% of both males and females had moderate depression. No children in our study had severe or profound depression (Table 1).

In our study, majority of the children had no depression (87.5%). According to the cut off scores, the depression was found to be in 10 children (12.5%) and among those with depression, majority (10%) had mild degree of depression. The prevalence of moderate depression was 2.5% (n= 2). No children in our study had severe or profound depression (Table 2).

In this study, it was observed that prevalence of depression was high among children with family problems, abuse/neglect, social isolation, social media addiction and for those with self punishing behavior or suicide tendency. There was no significant difference in the prevalence of depression among other risk factors for depression. [Table 3].

## DISCUSSION
In this competitive era, there is an enhanced the risk of developing various mental disorders like depression. Well-documented studies to determine the prevalence of depression and its associated factors among children are few. In the current study, the BDI has been utilized to detect the prevalence of depression. Although it is not designed for diagnostic purposes, its epidemiologic utility has been evaluated in several studies, which concluded that it is a reliable and valid instrument for detecting depressive disorders. Several studies support the BDI's usefulness in measuring and predicting depression in adolescent samples[14,29,30].

Prevalence rates of depression are estimated to range from 15% to 66% in various studies. A study among adolescents in India done by Nair et al showed the prevalence of depression among college going girls as 29%[14,31]. Another study done by Modabber et al in Iran among high school and Pre-University students found out that 34% of them were depressed[14,32]. Vivek Bansal et al in their study found the prevalence of depression in adolescents to be 18.4% and that family problems, economic difficulty and school problems were significantly associated with higher rates of depression[2].

The present study has shown a lesser prevalence of depression in children compared to the above studies. Most of the children in the

study had no depression. Among those children with depression, more than 3/4 belonged to mild degree and a very few had moderate degree of depression. None of the children had severe or profound depression in our study. In our study, depression was found to be more in females compared to males.

The prevalence of depression in our study was high among children with family problems, abuse or neglect, social isolation, social media addiction and for those with self punishing behavior or suicide tendency. There was no significant difference in the prevalence of depression among other risk factors for depression. This correlated well with others studies done by K.Devi et al and Vivek Bansal et al[2,33].

Positive subjects were counseled and a child psychologist took sessions for the participants after the study. The students were also offered to consult a psychiatrist and seek help and confidentiality was assured.

This study gave an idea of magnitude of depression among children and adolescents and some of its associated factors, which can be evaluated by further studies in depth by qualitative and quantitative methods. It points out to the importance of screening this vulnerable population and taking appropriate interventional measures to prevent the complications of depression.

## CONCLUSION

Depression is one of the most common and major issues in children in this developing era. Even though our study did not show a high prevalence of children with depression, routine screening and assessment for depression should be done since it can cause long term consequences and can affect the child's well being. Primary health care providers should be trained for the assessment of children during routine visits.

### Table 1: Grades of depression according to sex

| Gender | No depression (0-9) | Mild depression (10-18) | Moderate depression (20-29) | Severe depression (30-40) | Profound depression (>40) |
|---|---|---|---|---|---|
| Male | 31 | 3 | 1 | 0 | 0 |
| Female | 39 | 5 | 1 | 0 | 0 |
| Total | 70 | 8 | 2 | 0 | 0 |

### Table 2: Grades of depression

| GRADING | NUMBER | PERCENTAGE |
|---|---|---|
| No depression (0-9) | 70 | 87.5 |
| Mild depression (10-18) | 8 | 10 |
| Moderate depression (20-29) | 2 | 2.5 |
| Severe depression (30-40) | 0 | 0 |
| Profound depression (>40) | 0 | 0 |
| TOTAL | 80 | 100 |

### Table 3: Prevalence of depression according to associated factors

| DETERMINANTS | No. of students | No. of students with depression | P value |
|---|---|---|---|
| 1. Concentrating difficulty Yes No | 15 65 | 5(33.3%) 2(3%) | <0.0001 |
| 2. Disappointments Yes No | 10 70 | 4(40%) 1(1.4%) | <0.001* |
| 3. Pessimism Yes No | 8 72 | 4(50%) 0 | 0.08 |
| 4. Chronic stress Yes No | 9 71 | 3(33.3%) 1(1.4%) | 0.07 |
| 5. Use of alcohol/sedatives Yes No | 0 80 | 0 10(12.5%) | 0.07 |
| 6. Abuse/Neglect Yes No | 15 65 | 5(33.3%) 2(3%) | 0.01* |

| | | | |
|---|---|---|---|
| 7. Sleep problems Yes No | 10 70 | 6(60%) 2(2.8%) | 0.06 |
| 8. Restless/Irritable Yes No | 5 75 | 4(80%) 1(1.3%) | 0.63 |
| 9. Hopeless/ Helpless Yes No | 7 73 | 3(42.8%) 0 | 0.08 |
| 10.Social isolation Yes No | 10 70 | 5(50%) 3(4.2%) | 0.02* |
| 11.Appetite change Yes No | 0 80 | 0 10(12.5%) | 0.073 |
| 12.weight change Yes No | 0 80 | 0 8(10%) | 0.07 |
| 13.Social media addiction Yes No | 44 36 | 6(13.6%) 2(5.5%) | 0.001* |
| 14.Loss of interest Yes No | 12 68 | 4(33.3%) 2(2.9%) | 0.06 |
| 15.H/O persistent physical problems Yes No | 15 65 | 3(20%) 2(3%) | 0.07 |
| 16.Self hate Yes No | 6 74 | 4(66.6%) 2(2.7%) | 0.062 |
| 17.Punish self/ Suicide Yes No | 2 78 | 2(100%) 0 | <0.001* |
| 18.Mood Yes No | 12 68 | 3(25%) 5(7.3%) | 0.06 |
| 19.Decision making difficulty Yes No | 9 71 | 2(22.2%) 0 | 0.063 |
| 20.Family problems Yes No | 18 62 | 6(33.3%) 3(4.8%) | 0.01* |
| 21.Guilty Yes No | 9 71 | 3(33.3%) 1(1.4%) | 0.071 |

**\*P value less than 0.05 is considered as significant**
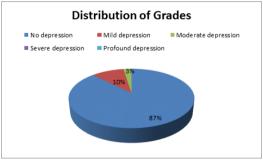


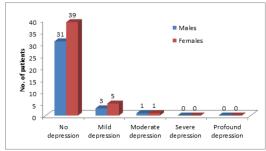Fig 1:Distribution Of Grades



Fig 2: Grades of depression according to sex

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