

## TO STUDY ATTENTION DEFICIT HYPERACTIVITY DISORDER SCREENINGS FOR CHILDREN IN PRIMARY SCHOOL IN URBAN AREA

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### ABSTRACT

**Background:** Inattentive, agitated, and impulsive child behavior are symptoms of Attention Deficit Hyperactivity Disorder. The most prevalent neurobehavioral condition in children is this one. Academic failure, substance misuse, and juvenile delinquency in adolescence and adulthood are just a few of the significant impairments that children with this illness.

**Materials & Methods:** The Department of Paediatrics at Viswabharathi medical college conducted this descriptive-style cross-sectional study. The research was done between September 2022 to march 2023. The study comprised students from Government schools in Andhra Pradesh. Children in Andhra Pradesh urban lower socioeconomic category are served by these schools. From 15 different schools, 500 students between the ages of 5 and 11 were chosen.

**Results:** Male children have a higher prevalence of ADHD than female children. The age range between 10 and 11 was where prevalence was highest. The male to female ADHD ratio is 2.7:1. Following combined subtype of ADHD are attention deficit and hyperactive-impulsive subtypes. ADHD is more common in children from lower socioeconomic level than from medium and upper socioeconomic class. Poor social behavior was the most frequent related comorbid condition, followed by poor academic achievement.

**Conclusion:** According to the current study, ADHD is very common in primary school students, and it is more common in boys than in girls.

**Keywords:** Prevalence, socioeconomic level, and attention deficit hyperactivity disorder

### INTRODUCTION

The syndrome of inattentive, agitated, and impulsive child behavior is known as Attention Deficit Hyperactivity Disorder (ADHD). It is the most prevalent neurobehavioral condition in children. Children who have this disease run the risk of developing learning disabilities, behavioral problems, and social issues. They also run the risk of major impairments like academic failure, substance misuse, and juvenile delinquency in adolescence and adulthood. As a result, this disease significantly increases the demand for judicial, educational, and mental health services [1, 2].

Biological, social, and psychological variables interact to cause ADHD. The neuropathology of ADHD is undoubtedly influenced by biological variables, such as inherited risk. Social factors play a key role in determining the handicap brought on by the condition, the outlook for specific kids, and attitudes regarding the underlying cause of the disorder and its treatment. The link between the underlying neuropathology and the behavioral manifestations of the condition are mediated by psychological processes, including attention and information processing deficiencies. As a result, the illness is instructive for research on juvenile psychopathology as a whole [3, 4].

Studies from the nineteenth century noted that impulsive, overly energetic, and inattentive youngsters were characteristics of ADHD. The illness, which involves subtle neurological symptoms, minor congenital defects, and inattentiveness, was referred to as a "defect in moral control" in the early 20th century. The illness was once referred to as hyperkinetic kid syndrome when it first emerged in current categorization. Moral judgment was the most recent development of evolution, and it was believed to have been lost due to numerous brain traumas, according to Darwinian Theory [5, 6].

In India, there has been little research done on ADHD. Prevalence rates ranging from 10 to 20% are reported by the scant studies that are available. In 1998, M.S. Bhatia and colleagues conducted research on Attention Deficit

Hyperactivity Disorder among psychiatric outpatients in India's capital city of New Delhi. They discovered that 17.7% of children there had ADHD, with a male to female ratio of 3:1. The average age of male children with ADHD was 9.1 years, compared to 7.9 years for female children. In a 1999 study by Prahbhjot Malhi et al. on the spectrum of attention deficit hyperactivity disorder in children referred to outpatient psychology services in India, it was discovered that 8.1% of those children met the DSM IV criteria for ADHD. Children with ADHD had a 5:1 male to female ratio [7, 8].

The children with ADHD were 6 years and 8 months old on average. 15% were classified as combination types, 35% as generally inattentive types, and 50% as predominantly hyperactive-impulsive types [9]. Children with ADHD who also had another problem did so in 40% of cases. Three of the four children with ADHD met the clinical criteria for oppositional defiant disorder, and one child had comorbid Tourette syndrome. Four of the children with ADHD also had a comorbid specific learning disability. Children in primary schools were found to have an 11.32% prevalence of ADHD. It was discovered that prevalence was higher in men than in women. 16.33% of those in lower socioeconomic groups and 6.84% of those in medium socioeconomic groups were found to be predisposed. The age range of 9 and 10 years had the highest frequency [10, 11].

The illness is known as Hyperkinetic illness in accordance with the International Classification of Diseases. The number of cases with this disease was rapidly on the rise in the second half of the 20th century. The name of the disorder was changed to Attention Deficit Disorder in the third edition of the Diagnostic and Statistical Manual in 1980. As opposed to over activity, cognitive impairment was the main contributing factor. Attention Deficit Hyperactivity Disorder was the new label adopted by DSM-III-R, which also grouped all symptoms under one heading. In DSM IV, the symptoms were divided into hyperactive-impulsive and inattentive categories [12, 13].

## MATERIALS AND METHODS

The Department of Paediatrics at Viswabharathi Medical College conducted this descriptive-style cross-sectional study. The research was done between September 2022 to march 2023. The study comprised students from Government schools. Children in Andhra Pradesh urban lower socioeconomic category are served by these schools. From 15 different schools, 500 students between the ages of 5 and 11 were chosen.

### Inclusion Criteria:

- Youngsters aged 5-11 make up our first target demographic.

### Exclusion Criteria:

- Epileptic or otherwise delayed children.
- Two, kids who have a family history of neurological or endocrine diseases.
- Children who have been on long-term medication or have a history of chronic disease.

### Methodology:

The academic and social repercussions of ADHD were addressed to the instructors in telugu during the first session using audio-visual aids. The second meeting served as a training session for teachers to complete the Vanderbilt evaluation scale Teacher's version. Following the education campaign, classroom teachers administered the Teacher's Version of the Vanderbilt Assessment Scale to determine whether or not any of the students had ADHD. During this time, they made periodic visits to the schools to answer teachers' questions, assist them in evaluating the students, and collect data for the questionnaire.

### Results

Children who tested positive after their parents filled out the questionnaire were told to come to the hospital. In the outpatient setting, parents of children with impaired assessment were asked to fill out a questionnaire in order to confirm and review the presence of any comorbid factors using the Child Behavioral Checklist scale. After a positive screening, a psychiatrist was consulted to confirm the diagnosis and choose the best course of treatment for every child who tested positive. Our outpatient department routinely follows up with families whose children have been diagnosed with ADHD to get the psychiatrist's perspective.

**Table 1: children who may have ADHD**

Sr. No.	Children suspected to have ADHD	Number
1.	ADHD	100

2.	Normal	400
	<b>Total</b>	<b>500</b>

According to the Vanderbilt Assessment Scale-Teacher's Version, 100 out of 500 school children who were screened by their respective class instructors tested positive.

**Table 2: ADHD diagnosed**

Sr. No.	ADHD Diagnosed among suspected	Number
1.	ADHD +ve	76
2.	ADHD +ve (Drop outs)	10
3.	ADHD -ve	14
	<b>Total</b>	<b>100</b>

Psychiatrists confirmed that 76 of the 93 (seven children were dropped out of 100) children who tested positively for ADHD.

**Table 3: ADHD prevalence**

Sr. No.	ADHD Prevalence	Number
1.	ADHD +ve	76
2.	Normal	417
	<b>Total</b>	<b>493</b>

The researchers found that 9.67% of the participants (76 out of 493) had ADHD.

**Table 4: Age breakdown of the total number of children**

Sr. No.	Age in years	Total no: of children
1.	5	32
2.	6	110
3.	7	17
4.	8	46
5.	9	160
6.	10	58
7.	11	77
8.	Total	500

500 children participated in the study, of whom 135 were between the ages of 10 and 11 years, 206 were between the ages of 8 and 9, and 159 were younger than or equal to 7 years.

**Table 5: Distribution of all children, by gender**

Sr. No.	Gender	Number of children
1.	Male	239
2.	Female	261
	<b>Total</b>	<b>500</b>

500 youngsters in all were evaluated for this screening. 239 male children and 261 female children make up the total number of children.

## DISCUSSION

76 of the 500 kids who were tested with the Vanderbilt Assessment Scale-Teacher's Version by their classroom teachers were suspected of having ADHD. These youngsters underwent additional verification and reevaluation using the CBCL scale, and were then assessed by a psychiatrist for confirmation. Seven of the 120 kids who were screened positively by the teachers dropped out of the study for a variety of reasons. 96 of the remaining 493 kids had ADHD, according to a psychiatrist. This is consistent with the findings of other investigations, which revealed prevalence rates ranging from 2% to 17%. The prevalence percentages reported in the few research that are available in India ranged from 8 to 20%. The majority of these research were kids who were outpatient clinic patients. A study on the prevalence of attention deficit hyperactivity disorder among Coimbatore primary school students was conducted in 2013 by Venkata JA et al. Based on the CARS score and the teachers' evaluations, 635 students from four different schools were chosen. Children in primary schools were found to have an 11.33% prevalence of ADHD. 1000 kids from 15 different schools were enrolled in this study.

The age of the children with ADHD was also taken into consideration. Each age group's prevalence rate was

determined. Children between the ages of 10 and 11 were found to have the highest prevalence of ADHD. This is in line with the findings of other studies, which revealed that children with a mean age between 9 and 11 years old had the highest frequency of ADHD [13-15].

Compared to female children, male children are more likely to have ADHD. There were 239 male children who were screened in all, and 70 of them had ADHD diagnoses. The prevalence of ADHD among boys was 12.98%. There were 261 female youngsters who were screened in all, and 26 of them had ADHD, according to the results. The prevalence of ADHD among young girls was 5.63%. 72.92% of the 76 kids who were diagnosed with ADHD were boys, compared to 27.08% of the girls. In this study, the ratio of men to women with ADHD is 2.7:1. This is in line with earlier research that found a male predominance and a similar gender disparity, with ratios between a clinically referred sample and a population sample ranging from 10:1 to 3:1 [16-18].

85 of the 454 children from upper, lower, and lower socioeconomic status who were screened for ADHD had it. 9.96% of people have the condition. In this study, the prevalence rate among middle- and upper-class individuals is 7.56% [19]. This difference was found to be very significant by chi-square analysis. Which is consistent with a prior study by Venkata JA et al., who found that low socioeconomic status had a higher frequency of ADHD than middle and upper socioeconomic status [20]. A previous study conducted in India by Palaniappan P et al. found that the rate of comorbidities in children with ADHD ranged from 40 to 86.3%. This study found that among the 96 children who were identified as having ADHD, 58 of them had associated co-morbid conditions and 38 of them had no associated co-morbid illness. 52.9% of them had linked co-morbid conditions, while 47.1% had none, according to a different study by Pingali s et al [21-23].

Reading difficulty, writing trouble, behavioral issues, bad social behavior, poor academic performance, and conduct disorder were found as the co-morbid conditions connected to ADHD based on the Vanderbilt assessment scale Teacher's Verson & CBCL [24]. In this study, poor reading comprehension in 13, behavioral difficulties in 11, writing difficulties in 10, poor social behavior in 17, poor academic performance in 18 of the participants, and conduct disorder in 2 of the participants were identified [25]. 33.33% of the participants in the earlier study by Venkata JA et al. exhibited subpar academic performance. Poor academic performance made for 31.03% of the comorbid conditions in this study. In this study, reading and writing difficulties were noted in 13.5% and 10.4%, respectively. Similar findings of 15.27% prevalence for reading and writing impairments are also presented by Venkata JA et al. A previous study by Byun H et al. found that the combined-type group had a significantly higher ratio of co-morbid disorders. When co-morbidities were studied according to ADHD subtype, combined type was predominantly associated with co-morbidities in this study [26-28].

### **Conclusion**

Based on the findings of the current study, it can be said that 9.67% of urban Government primary school students had ADHD. Compared to female children, boys have a higher prevalence of ADHD. The age range of 10 to 11 is where prevalence is highest. ADHD is more common in kids from lower socioeconomic backgrounds. The most prevalent subtype of ADHD is combined, which is followed by attention deficit and hyperactive-impulsive subtypes. Children with attention deficit disorder tend to be more feminine, while those with hyperactive-impulsive disorder tend to be more male. The most frequent related comorbid problems were poor social behavior and poor academic achievement.

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None

### **Conflict of interest**

None

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