

Original Research Article

A Study to Assess the Prevalence of Attention Deficit Hyperactivity Disorder among Primary School Children at Selected Schools of Kancheepuram District in Tamilnadu

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ABSTRACT

Background: Attention Deficit Hyperactivity Disorder (ADHD) is a Neurobiological disorder characterised by Inattention, Hyperactivity, and Impulsivity. It is one of the rising public health problems in the world.

Aim: To assess the prevalence of ADHD among primary school children.

Materials and methods: Cross sectional descriptive research design was adopted. Study was conducted at selected primary schools of Kancheepuram district in Tamilnadu. Sample consisted of 865 children with the age group of 4-10 years from five different primary schools. Modified Conner's teachers rating scale was used to identify the symptoms of Attention deficit hyperactivity disorder among primary school children. For data analysis Descriptive and inferential statistics was used.

Results: Results showed that out of 865 children total number of males was 407, females was 458. ADHD symptoms were identified 37(69%) male children and 17(31%) female children were indentified. Prevalence of ADHD was more in boys than girls.

Conclusion: Prevalence of ADHD estimates in school children ranging from 3-12% and worldwide prevalence of ADHD in children is estimated to approximately 5%. Study reported that 6.3% of primary school children with symptoms of ADHD were identified. If found out symptoms early, can reduce the Incidence of ADHD among children in future.

Key words: Assess, prevalence, Attention deficit hyperactivity disorder, primary school children.

INTRODUCTION

Attention deficit hyperactivity disorder (ADHD) is one of the most common childhood disorders that develops in children and becomes apparent in the preschool, early school years and continue through adolescence and adulthood. It is one of the rising public health concerns which are characterized by inappropriate levels of inattention, hyperactivity and impulsivity. The world wide prevalence rate estimated was 5.29%.^[1] Several family,

environmental and Maternal factors are closely related to the incidence of ADHD in children. The average age of Attention Deficit Hyperactivity Disorder diagnosed in children between 6 to 12 years. The prevalence of ADHD is 5.2% in 3-4 years and 29.2% in 11-12years.^[2]

The American Psychiatric Association reports that 5% of American children have ADHD.^[3] But the Centers for Disease Control and Prevention, US tell that

11% of American children aged 4 to 17 have the attention deficit disorder. [4]

According to health line the current statistics 5 million (10%) American children 3-17 years of age have been diagnosed with Attention deficit hyperactivity disorder. Boys (14%) were almost three times as likely as girls (5%) to have ADHD. [5]

A study was performed in 6 localities in south west Mumbai to determine the prevalence rate of ADHD in preschool age children. 1250 (599 male and 651 female) children aged between 4-6 years were selected from 40 kindergartens. The Conner's index questionnaire was completed for each child by teachers and parents. Parents of children whose scores were positive for ADHD (>15) were interviewed by a psychiatrist and the ADHD was diagnosed based on DSM-IV criteria Schedule for affective disorders. 152 (12.2%) children were diagnosed to have ADHD. The prevalence of ADHD in preschool age school in south west of Mumbai was increased. This study recommends the need for diagnosis and treatment of ADHD in preschool age children. [6]

Need for the study

Attention deficit hyperactivity disorder is a highly prevalent, chronic disorder affecting millions of children. Current prevalence estimates range between 5 to 10% of the children and adolescents population in the United States. [7] The Diagnostic and Statistical manual of mental disorders, fourth edition, and text revision defines three subtypes of ADHD: combined type (Hyperactivity/impulsivity and Inattention), Inattention type, and hyperactivity type. [3] According to WHO prevalence is approximately 3-7% of school age children with ADHD. [8]

Indian academy of pediatrics reported that the incidence of ADHD is highest among all development disabilities 75/1000. [9] Common problems associated with ADHD are sleep disturbance, aggression, temper tantrum and other learning problems. Extreme forms are

considered to be harmful to the individual Development. Peer relationships are often disrupted by peer rejection, neglect, or teasing of the individual with ADHD. On average, individuals with ADHD obtain less schooling, have poorer vocational achievement, and reduced intellectual scores than their peers. In its severe form, the disorder is markedly impairing, affecting social, familial, scholastic and occupational adjustment. Academic deficits, school-related problems, and peer neglect tend to be mostly associated with elevated symptoms of inattention, whereas peer rejection and Accidental injuries are most salient with marked symptoms of hyperactivity or impulsivity. [3]

ADHD among rural Southeastern Nigerian primary school children Prevalence and psychosocial factors explained to determine the prevalence of ADHD in a rural community. 181 children were selected and administered school version of ADHD rating scale-IV. Results showed 12 (6.6%) of children met the criteria for diagnosis. A history of prolonged labour during delivery had higher risk getting ADHD diagnosis is about 14.1% among children. [10]

A prevalence study of ADHD in Italian students was conducted on 6183 school children, who consist of 3178 male and 3005 females. Their parents are asked to complete a clinical diagnostic assessment of ADHD with the help of experienced clinician. Results showed that 163 males and 27 females were diagnosed with ADHD for the age group of 5-14 years. Prevalence rate of ADHD was 3% in that combined type 56.8%, Inattention type 25.2% and impulsivity type 17.3%. [11]

Iranian journal of pediatrics conducted a study to assess the prevalence of Attention deficit hyperactivity disorder symptoms in Iranian preschool children based on the evaluations given by parents and teachers. Children with the age group of 3-6 years were selected. It consists of 2213 children. A 19 item observer - rating questionnaire was used to assess the ADHD

symptoms in children with in last 6 months. Out of 1403 children aged 3-6 years, 362 were classified as having ADHD symptoms. Results showed that symptoms of ADHD children in parent evaluation 25.8% and teacher evaluation 17%. Conclusion given was ADHD screening should be performed in multiple settings in order to indentify children who need further investigations. [12]

Aim

A Study to Assess the Prevalence of Attention Deficit Hyperactivity Disorder among Primary School Children at Selected Schools of Kancheepuram District

Objectives

- To determine the prevalence of attention deficit hyperactivity disorder in primary school children
- To compare the gender differentiation in the prevalence of attention deficit hyperactivity disorder
- to find out the association between attention deficit hyperactivity disorder among primary school children with their selected demographic variables

Assumption

The study assumes that Attention deficit hyperactivity disorder symptoms commonly found out between the age group of 5-7 years. If not found out early, children go for poor academic performance, short attention span, poor relationship, conflict with parents and conduct disorders.

MATERIALS AND METHODS

Research design: Cross sectional descriptive research design was used

Setting of the study: The study was conducted at selected primary schools of Kancheepuram district

Population: The population for the study was children with the age group of 4-10 years in selected schools of Kancheepuram district

Sample: Sample consists of 865 children with the age group of 4-10 years from five different schools in Kancheepuram district, Tamilnadu.

Sampling technique: Convenient sampling technique was selected

Description of the tools

Part I

Consists of the information on demographic variables such as age of the children, sex of the children, educational status of the children, and type of school, family history of ADHD, and socioeconomic status of children

Part II

Conner’s teachers rating scale was used. It consists of 25 items in three different areas. They were 10 inattention symptoms, 10 hyperactivity symptoms, and 5 impulsivity symptoms. The teacher has to tick the relevant column based on the presence or absence of symptoms.

- The overall grade for ADHD symptoms as
- <50 -mild symptoms
 - 51-75 -moderate symptoms
 - >75 -severe symptoms

Plan for data analysis

Statistical methods - descriptive statistics and inferential statistics was used
Data analysis and interpretation

RESULTS AND DISCUSSION

Table 1: To determine the prevalence of attention deficit hyperactivity disorder in primary school children

Gender	Children with ADHD symptoms	Children without ADHD symptoms	Total number of children	Chi square	P value
Female	17(31%)	390(48%)	407(47%)	5.6	0.02
Male	37(69%)	421(52%)	458(53%)		
Total	54	811	865		
Percentage	6.3%	93.7			

Results reported that out of 865 children total number of Males was 407 and Females was 458. Children with ADHD

symptoms were identified among 37(69%) Male children and 17(31%) Female children. Prevalence of ADHD was more in

boys than girls. Chi-square value was 5.6 and level of significance p value was 0.02. Overall findings showed that 6.3 % of children were identified with ADHD symptoms. There was a significant relationship between symptoms of ADHD among male and female children.

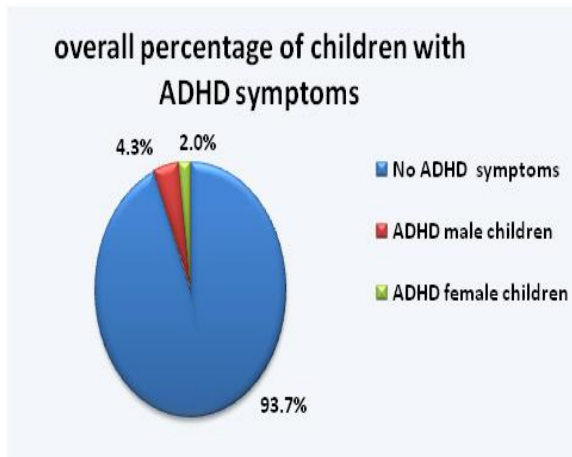


Figure 1

Prevalence rate of ADHD was more in Boys than Girls. Total number of males

was 407, females was 458. An ADHD symptom was identified 37% among male children and 17% among female children.

Table 2: To compare the gender differentiation in the prevalence of attention deficit hyperactivity disorder

Gender	Children with ADHD symptoms	Percentage
Female	17	31%
Male	37	69%
Total	54	

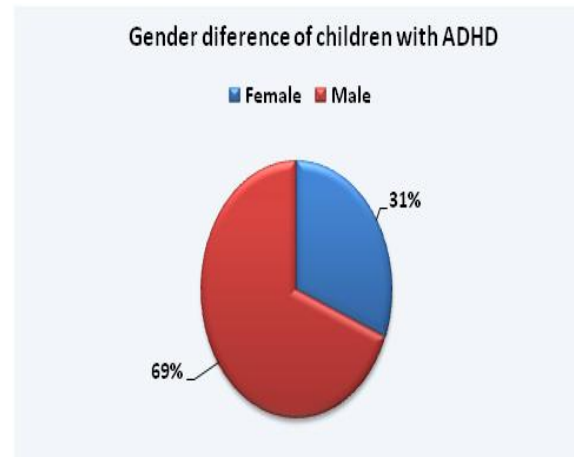


Figure 2

Table 3: To find out the association between attention deficit hyperactivity disorder among primary school children with their selected demographic variables

Age in years	Total number of children with ADHD	No. of boys	No. of girls	prevalence
6	6	4	2	11%
7	12	8	4	22%
8	15	9	6	28%
9	13	8	5	24%
10	8	8	0	15%
	54	37	17	

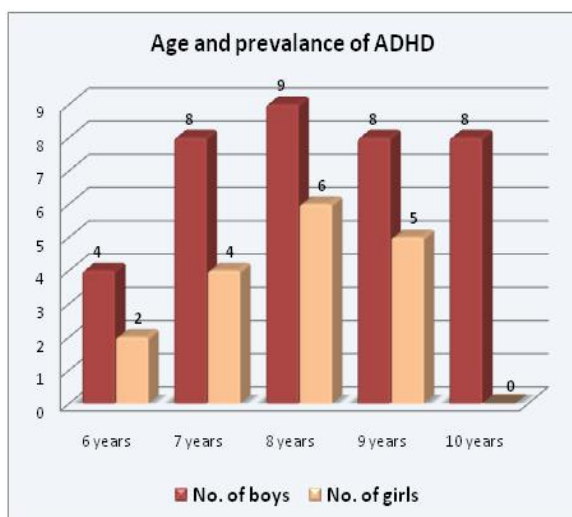


Figure 3

Prevalence of children with ADHD among children was highest between the age group of 7-9 years.

ADHD and socioeconomic background

There was a significant difference between the socioeconomic status and ADHD symptoms. Out of 54 children with ADHD symptoms 55% children belonged to low socioeconomic background, 30% in middle socioeconomic background and 15% belonged to high economic background. Venkatesh C, Ravikumar T., et al (2012) did a study on Clinical profile and co-morbidity in Indian children with ADHD; A prospective analytical study of 2 years duration at the child guidance clinic of a tertiary care hospital in south Indian city. 51(20.3%) children diagnosed ADHD belonged to middle and low socioeconomic class and were first born children. [13]

CONCLUSION

Attention Deficit Hyperactivity Disorder a global burden of disease, has been increasing dramatically in past few years, it indicates that by the year 2020, childhood neuropsychiatric disorders will increase by more than 50% internationally to become one of the five most common causes of morbidity and disability among children. Current Research studies reported that over consumption of sugar, foods with artificial colour, saturated fat are aggravate the characteristic symptoms of ADHD in children.^[14]

Attention Deficit hyperactivity disorder is found to be a common problem among school children. There would be an incidence of learning disability with co-morbid mental disorders. Early recognition will helps to reduce the severity of symptoms, enhance the child's normal growth and developmental process, improve their quality of life, self esteem, social functioning and prevent the complication in future.

Recommendations

- Health education module related to care of children with ADHD disorder among parents and teachers
- In service education to Nurse on ADHD disorder including illness, prevention, management and complication
- Train the teacher regarding early recognition of symptoms and how to tackle the children with ADHD symptoms

Suggestions

Similar study can be conducted as longitudinal study using large sample

A similar study can be conducted in urban and rural areas and results can be compared

Similar study conducted with a true experimental research

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