<u>Original research article</u>

A study on correlates of attention deficit hyperactivity disorder among schools children

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 Abstract
Clinicians must rely on subjective reports of symptoms from the parents and teachers. Interrater reliability estimates between parent and teacher reports of ADHD symptoms tend to be low28, perhaps partly because the manifestation of symptoms is setting and task-dependent and because parents and teachers are sensitive to different behaviours. Thus a sample size of 7600 was selected from each of these 14 schools. When sufficient number of study subjects cannot be found, the neighbouring schools were visited till attaining the desired number of study subjects. Approval of district education officer was taken and then school head masters and class teachers were contacted and written informed consent was taken. In our study ADHD was associated with poor academic performance in 79.4%, aver- age performance in 18.8% and good performance only in 1.7%. This is in accordance with the fact that there is functional impairment in children with ADHD. The good academic achievement in 1.7% (2 children) this can be explained by assumption that some children with high IQ and ADHD will have marginal impairment and still have good academic scores.
Keywords: Correlates, Attention Deficit Hyperactivity Disorder, Schools Children

Introduction

Attention deficit hyperactivity disorder has been described almost everywhere around the world. ADHD is defined as a "persistent pattern of inattention, hyper- activity and impulsivity, that is more frequent and severe than is typically observed at a comparable level of development" Affecting approximately 5% of school-age children and frequently persisting into adulthood [1].

Epidemiology is the study of the distribution of a particular disease in the population and the factors associated to it. Epidemiologic data are essential for planning health services and implementing strategies of detection and early intervention, with possible substantial benefits on public health. Epidemiology can also provide insight into the etiology of the disorder, its natural history, and risk factors [2].

Considering that ADHD is a clinical diagnosis, the criteria adopted and validity of measures used play a major role in the results that are generated.

The classificatory systems (Diagnostic and Statistical Manual of Mental Disorders [DSM]and International Statistical Classification of Diseases [ICD]) have somewhat different diagnostic criteria that influence prevalence estimates. For example, theICD-10 requires a minimum number of symptoms in all three dimensions (Inattention, over activity, and impulsivity),whereas DSM-IV requires a minimum of six symptoms in one or two dimensions (inattention and hyperactivity- impulsivity).Moreover, ICD-10 specifically requires that the symptoms required for diagnosis must be identified within each of two or more settings, whereas DSM-IV does not require the full symptoms and impairment to be present in each setting, merely that sufficient symptoms be present for diagnosis across at least two set- tings. Not surprisingly, estimates based on ICD-10 criteria are consistently lower that those based on DSM-IV criteria [3, 4].

Another key methodological issue in determining prevalence estimates in ADHD studies concerns the strategy adopted by investigators to collect and combine in- formation to generate the diagnosis [5].

Clinicians must rely on subjective reports of symptoms from the parents and teachers. Interrater reliability estimates between parent and teacher reports of ADHD symptoms tend to be low, perhaps partly because the manifestation of symptoms is setting and task-dependent and because parents and teachers are sensitive to different behaviours [6].

Methodology
Source of data
The children of government and private schools, studying in Telugu and English medium primary

schools from 3rd standard to 7thstandard.

Study Design: Cross sectional- descriptive study.

Study Duration: Time period of one year

Sample size: 7600.

Sampling method: Multi stage, random sampling.

Inclusion Criteria
1. School children of age 8 -12 years of age.
2. Children of ADHD with documented evidence.

Exclusion criteria
1. Children with other neurodevelopmental disorders.
2. Children with sequelae of central nervous system trauma.
3. Children with intellectual disability.
4. Schools which do not give consent.

Study method
All schools teaching primary education were selected.

In the first stage Total numbers of schools were counted.

There were 20 government and 26 private schools

In the second stage In order to have representative sample 7 government and 7 private schools were selected randomly. (Lottery method)

In the third stage All school children from third and fourth standard were taken in to the study.

Thus a sample size of 7600 was selected from each of these 14 schools. When sufficient number of study subjects cannot be found, the neighbouring schools were visited till attaining the desired number of study subjects. Approval of district education officer was taken and then school head masters and class teachers were contacted and written informed consent was taken.

Results

Table 1: ADHD children and type of school

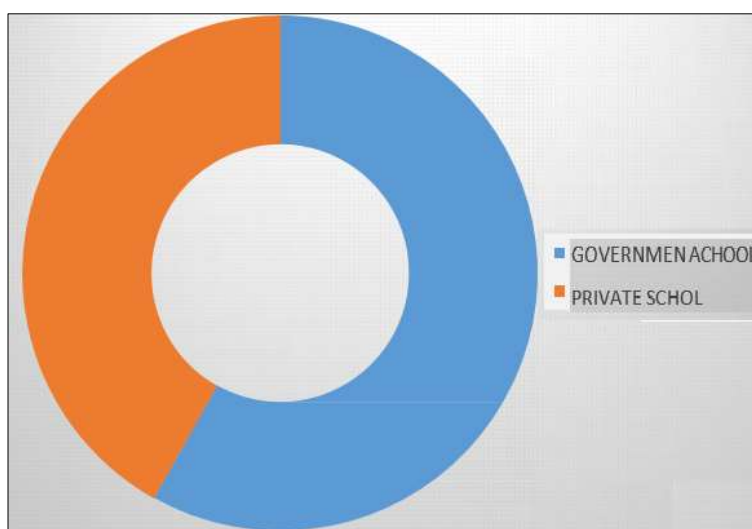| Type of school	Frequency	Percentage (%)
Government	68	58.1%
Private	49	41.8%
	117	100

Fig 1: ADHD children and type of school

Table 2: Academic performances of adhd children

Academic performances	Frequency	Percentage (%)
Good (>70%)	2	1.7%
Average (40%-70%)	22	18.8%
Poor (<40%)	93	79.4%
	117	100

This table shows the academic performance of children who were diagnosed to have ADHD. This academic performance was based on the marks taken in the tests and examsin school. Out of 117 children only 2 children were having good grades, 22children having average scores and 93 children having poor marks.
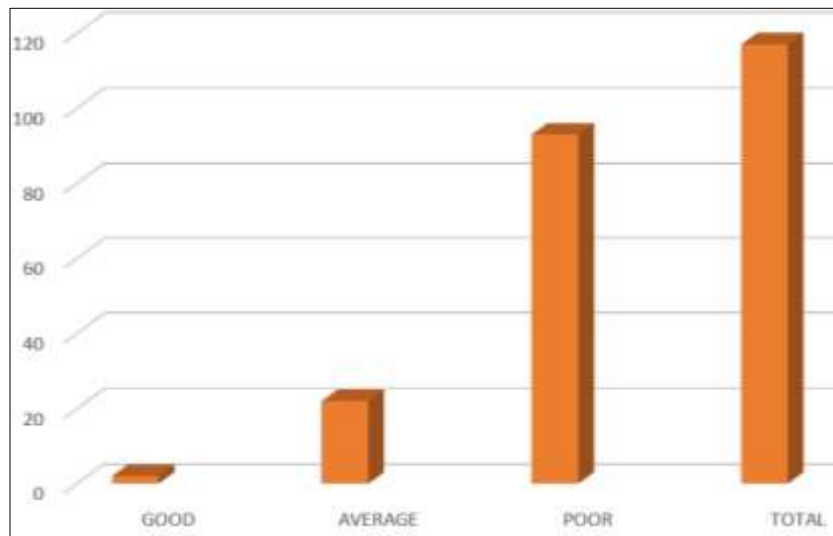

Fig 2: Academic performances of ADHD children

Table 3: Place of delivery of ADHD children

Place of delivery	Frequency	Percent (%)
Home	40	34.1%
Hospital	77	65.8%
	117	100

This table shows that 34.1% of children were delivered at home and 65.8% were delivered at hospital

Table 4: Gestational age of ADHD children

Gestation age	Frequency	Percent (%)
Term	111	94.8%
Preterm	6	5.1%
	117	100

This table states that out of 121 ADHD children 111(94.8%) were born at term an- donly 6(5.1%) were born preterm
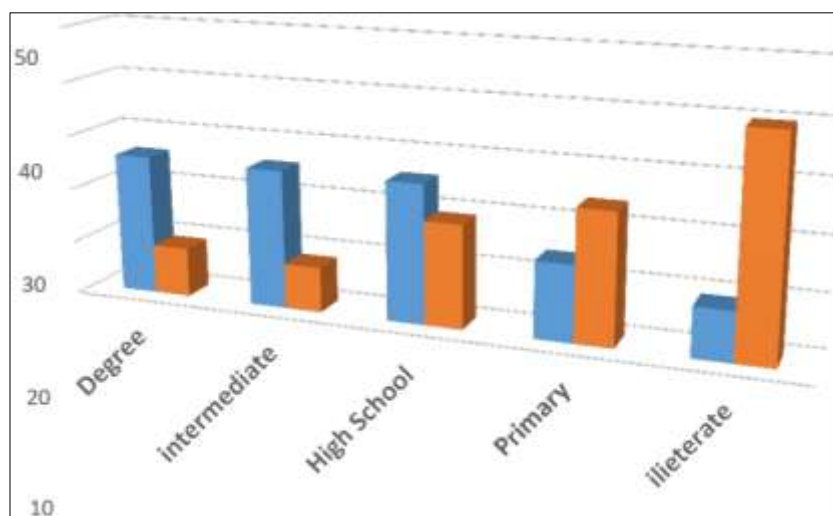

Fig 3: Educational status of parents of ADHD children

This chart shows educational status of parents of children diagnosed to have ADHD. It shows 39.7% of mothers were illiterate, 24% of them have completed primary education, 19% of them completing high school and only 9.1% completing degree. This chart also shows that among fathers only 9.1% were

illiterate, 14% completing primary education and 25.6% each completing high school, intermediate and degree

Discussion

In our study ADHD was associated with poor academic performance in 79.4%, aver- age performance in 18.8% and good performance only in 1.7%. This is in accordance with the fact that there is functional impairment in children with ADHD. The good academic achievement in 1.7% (2 children) this can be explained by assumption that some children with high IQ and ADHD will have marginal impairment and still have good academic scores [7, 8].

This present study shows increased number of illiterate mothers among ADHD children. It also shows correlation of prevalence of ADHD with parents' educational status. Prevalence increased with low level of education among parents. This finding is consistent several other studies.
Possible explanation include [9, 10].
Parents with low level of education had poor knowledge of how to deal with children with ADHD.
May frequently lack several important parenting skills, may be treating children violently which will have negative influence on them and lead to increased symptoms.
Our study shows higher prevalence of ADHD among children whose mothers were housewives is not consistent with the hypothesis that housewives are in a better position to look after their children at home both socially and psychologically. A high pro- portion of mothers in this study were either illiterate or had primary education, which puts more weight on education as a contribution factor.
ADHD is one of the best investigated child mental health disorders. ADHD has received a great deal of clinical, scientific and public attention in recent years. In the last decade, western literature on this syndrome has grown but in India only a few studies have been done. Hence this study was done to fill this void.
Our study found prevalence of ADHD among schoolchildren in Tirupati was 1.52% and this prevalence constitutes a major public health problem
There is lack of awareness about ADHD in parents, teachers and even among treating clinicians. Therefore there is need for creating awareness among pediatricians and teachers. School teachers should be aware of the symptoms of ADHD for early referral and diagnosis. They should also be trained on classroom management of ADHD children.

Conclusion

This present study shows increased number of illiterate mothers among ADHD children. It also shows correlation of prevalence of ADHD with parents' educational status. Prevalence increased with low level of education among parents.

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