

The Prevalence of Attention Deficit/Hyperactivity Disorder (ADHD) among Primary School Pupils of Benin Metropolis, Nigeria

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ABSTRACT This study investigated the prevalence of attention deficit hyperactivity disorder among pupils in primary schools in Benin City, Edo State through a teacher questionnaire. Three selected public schools were drawn purposively from schools in Benin City, Edo State. The pupils were selected from primary one to six, and the age range was between 5 to 12 years (mean age was 9.13yrs). The instrument used was the Disruptive Behaviour Disorder rating scale. Six research questions were generated and the statistical tool used was percentages. Four hundred pupils were sampled, 94 (23.15%) were screened as having symptoms of ADHD of which 45 (47.87%) had the Hyperactivity type, 20 (21.28%) had the Inattention type and 29 (30.85%) had ADHD combined type. The result confirmed that pupils in primary schools suffer more from ADHD hyperactivity type than inattention and the combined type. The sex ratio for ADHD combined type and Inattention type is about 2:1, while hyperactivity is about 1:1. Gender difference was found to vary across ADHD type. Boys being generally rated as more impaired in the combined with a prevalence of 21 (8.90%) but equally or less impaired with hyperactivity-impulsive subtype 28 (11.86%) and 9 (3.81%) in the inattention group. These findings suggest that there is a prevalence of ADHD in Edo State.

INTRODUCTION

Attention deficit hyperactivity disorder (ADHD) is characterized by inattention, hyperactivity, impulsivity, and cognitive, behavioral, and emotional deficits. ADHD is also closely related to learning disabilities, lack of self-control, and social skill deficits (Morris and Corner, 1987). Approximately half of ADHD children show overt symptoms by the time they are 5 years old, and most begin to display behavioral problems during the early school years when they have to follow instructions from teachers and obey school rules. ADHD children are reported to have difficulty with self-control both at home and in school, to have a tendency to show aggressive behaviors, to suffer from low self-esteem, to have frequent fights with peers, to experience isolation in social situations, to display problems with underachievement, and to have learning disabilities (Barkley 1989; Silver, 1992).

The school environment requires paying attention, sitting still, planning ahead, effective concentration and learning. Parents and teachers may have voiced out common complaints about children who never sit still, act without thinking or are easily distracted and as such can not keep on to one task. These children forget assignments

often, talk excessively and fidget, they find it difficult to wait their turns and blurt out answers before questions have been completed. The Federal Government of Nigeria in the National Policy on Education (Federal government of Nigeria, 2004:51) stated that the educational services facilitate the implementation of educational policy, the attainment of policy goals and the promotion of effective educational system. In addition, the policy noted that 'in view of the apparent ignorance of many young people about career prospects, and in view of personality maladjustment among school children, career officers and counsellors should be appointed in post-primary institutions'. Government is to put in place machinery for monitoring and evaluating the implementation of the National Policy on Education (NPE) provisions.

Every child occasionally has difficulty sitting still or sustaining attention. However, for some children the problem is so persistent and serious that it interferes with learning and relationships. It is common observation that these children have low attention span, which affects the child coping ability in school. At school they require differential treatment based on their needs to meet up with the school activities. Contrary to the expectation of a serene school environment,

pupils with ADHD are easily distracted, often seem to be daydreaming, and they do not finish what they start and repeatedly make what appear to be careless mistakes. This problem may not, be due to a deficit of attention, so much as to lack of consistent direction and control. In the school system, these attention deficit hyperactivity disordered pupils are often ignored, punished and given names by teachers. The teachers may not see the situation as a behavioural problem needing attention. They may rather attribute this problem to lack of proper home training from parents. Exasperated parents and teachers may also regard them as lazy, irresponsible and arrogant, while other children find them obnoxious and avoid them (Nadou and Dixon 1993).

Attention deficit hyperactive disorder may become a common learning disability. If this is so teachers may resort to punishing and bullying pupils with traces of ADHD (as defined in the Diagnostic and Statistical Manual of Mental Disorders 4th Edition (DSM-1V) without necessarily understanding the problems many of the pupils may be going through in the process of learning. Contrary to the provisions in the NPE, this disorder does not appear to have been identified as a major problem by educators in Nigeria. In the school system no provisions have been made regarding these attention deficit/hyperactivity disorder pupils who may exhibit behaviour contrary to the expectation in a learning environment.

According to Silver (1992), when pupils with Attention Deficit are left unidentified, the cumulative effects of low self-esteem, chronic school failure and inadequate social skills may lead to adolescent antisocial behaviour, which include alcoholism, drug abuse, dropouts, and even suicide. Some children may exhibit traits that are explorative, inquisitive, playful, restless, impulsive and over active than others, if these problems are not known such children might become problematic to themselves, their teachers, parents and siblings. They can carry these behavioural problems with them while in school; and pose problems to their teachers and peers. They lack self-control and sometimes they provoke conflict just for the love of excitement. (Uwe, 2000; Agbu, 2003). Since the prevalence of this disorder is unknown it is appropriate to conduct a study, as this will ascertain the prevalence of ADHD in Edo State, therefore the

major thrust of this study is what is the prevalence of ADHD among primary school pupils in Benin City, Edo State; and the Sex ratio among primary school Pupils? The results of this study will propel the state to adopt educational laws and regulations that are pupil friendly and provide flexible approaches to placement of pupils with learning disabilities especially Attention Deficit/Hyperactivity Disorder. This study will also be useful to parents and educators as well as other stakeholders to establish the importance of the knowledge of ADHD in identification, making referral for treatment and the education of pupils with this disorder. To direct this study the following research questions are raised.

Research Questions

1. Does ADHD exist among primary school pupils in Edo State if yes what percentage?
2. Does ADHD differ in occurrence with the class level and age of the pupils?
3. Are there more pupils diagnosed with hyperactivity/impulsivity symptoms more than inattention symptoms? What is the sex ratio?

METHODOLOGY

Participants: This study employed the Survey design involving only primary school pupils in Benin Metropolis, Edo State. It examined the prevalence of ADHD in three randomly selected primary schools in the metropolis. A sample size of 450 pupils' was used for the study to ascertain the prevalence of ADHD. The sample included boys and girls between the ages of 5 and 12 years. (Mean Age 9.13 years).

Instrumentation: After a review of related literature the Disruptive Behaviour Disorder (DBD) rating scale for teachers (Pelham, Gnagy, Greenslade, and Milich, 1992) was adopted for use. This scale is a checklist based on the globally accepted Diagnostic Statistical Manual 4th edition, to identify the symptoms of ADHD among children. A demographic data was attached to the scale.

The first part on DBD was to elicit information on the personal details of the child. It focused on the age, sex and class. The second part has a total of 42 items each describing a particular behaviour based on the DSM-IV criteria for ADHD, Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD). 18 out of 42 items

represent symptoms of ADHD. This checklist is to be rated by the teachers on a 4-point scale: “not at all”, “just a little”, “pretty much” or “very much”, according to the behaviour of the child over the previous six months. Disruptive Behaviour Disorder (DBD) rating scale has been used in South Africa. It became necessary to validate this instrument for Nigeria environment. To adopt its use in Nigerian culture it was given to two experts; a School Counsellor and a Psychiatrist who went through the instrument and approved of its use in the Nigerian culture since the Disruptive Behaviour Disorder (BDB) rating scale presents the DSM-IV criteria of ADHD in a structured way. A measure of reliability was obtained by administering the questionnaires to 20 pupils in one primary school. The Cronbach alpha coefficient (α) of the scores was calculated to determine the reliability coefficient of the instrument. The value was 0.9. The DBD rating scale was personally administered by the researchers to the class teachers in selected primary schools in Benin City, after permission had been obtained from the head teachers. The investigators distributed the rating scale to teachers who filled for pupils in their classes. The completed scales were collected after completion.

Pelham et al. (1992) developed the Disruptive Behaviour Disorders Rating Scale (DBD) as a checklist. It contains the behavioural descriptors of ADHD and its co morbid disorders as obtained in the DSM-IV (American Psychiatric Association, 1994) in a structured way. To score the scale, the items related to ADHD marked as “pretty much” and “very much” are counted as abnormal as either of these responses are positively endorsed symptom of the disorder. Items with ratings of “not at all” and “just a little” are considered normal. When at least six items on

the “Inattention Scale” or six items on the “Hyperactivity/Impulsivity Scale” or twelve items on the two scales combined are marked, the pupil is said to have the symptoms of ADHD. To analyze the results, descriptive statistics was used with the distribution of simple percentage frequencies

RESULTS

This study investigated the prevalence of Attention Deficit Hyperactivity Disorder (ADHD) among pupils in primary schools in Edo State. Based on the problem of the study, three research questions were formulated. Four hundred and six (406) children were studied; 236 were boys and 170 were girls. The age range was 5 to 12 years with a mean age of 9.13 years. They were drawn from primary 1, 2, 3, 4, 5 and 6.

Question 1. Does ADHD exist among primary school pupils in Edo State if yes what percentage?

The result showed that 94 out of the 406 pupils had scores that met the criteria for a diagnosis of ADHD, giving a prevalence rate of 23.15%. This confirms the existence of Attention Deficit/Hyperactivity Disorder among primary school pupils in the study population. From the respondents the percentage of pupils who were screened as having the symptoms of ADHD was computed using simple percentages. The percentage of pupils studied that suffer from this disorder is presented as follows; boys 24.57% and girls 21.28%, the overall prevalence is 23.15% (Table 1).

Question 2. Does ADHD differ in occurrence with the class level and age of the pupils?

In table 1 the percentages shows that the highest prevalence of ADHD is 35.71% for both boys and girls in primary six. This answers the question that ADHD does not differ in occurrence with class level of pupils. The comparison of age

Table 1: Distribution of gender among class in the sample (Percentages of prevalence per class).

Class	Boys			Girls			Total		
	Sample size	ADHD present	Prevalence %	Sample size	ADHD present	Prevalence %	Sample size	ADHD present	Prevalence %
1	53	12	22.64	23	7	30.43	76	19	25.00
2	20	5	25.00	14	3	21.43	34	8	23.53
3	44	11	25.00	43	4	9.30	87	15	17.24
4	25	5	20.00	18	4	22.22	43	9	20.93
5	52	10	19.23	44	8	18.18	96	18	18.75
6	42	15	35.71	28	10	35.71	70	25	35.71
Total	236	58	58.12	170	36	21.18	406	94	23.15

groups across gender in table 2 indicates that the disorder is more prevalent as assessed in this study in 7 and 12 years old for boys with a prevalence of 43.50% and 43.33% while in girls the highest prevalence was found in ages 5 and 6 with a prevalence of 37.50% and 36.36%.

Question 3. Are there more pupils diagnosed with hyperactivity/impulsivity symptoms more than inattention symptoms? What is the sex ratio?

Table 3, shows that the total number of pupils who screened for hyperactivity type was 45 (11.08%), 20 (4.93%) for inattention and 29 (7.14%) with ADHD combined type. The findings further revealed that more boys have the symptoms of hyperactivity and the combined type than girls, though more girls were screened for inattention with a percentage of 6.47% against that of boys 3.81%. Boys still manifested a higher percentage of symptoms for the combined type and hyperactivity 11.86% and 8.90% than girls who had 10.00% prevalence for hyperactivity and 4.71% for the combined type.

DISCUSSION

Ninety-four (94) pupils out of 406 pupils who participated in the study met with the criteria for diagnosing the symptoms of ADHD. This result confirms the existence of ADHD among primary school pupils in the studied population. The percentage of primary school pupils who suffer

from this disorder was computed at 23.15%. This is quite high when compared to the prevalence of the disorder among the boys (9.6%) and girls (4.4%) in a study of North Sotho speaking South African primary school (Meyer 1998). The comparison of age groups across gender indicates that the disorder is more prevalent as assessed in this study in 7 and 12 years old for boys with a prevalence of 43.50% and 43.33% while in girls the highest prevalence was found in ages 5 and 6 with a prevalence of 37.50% and 36.36%. Thus a general comparison of age group across gender indicates that the disorder is more prevalent as assessed in 7 years old boys with a prevalence of 43.50%. Similarly, in a study by Scuitto (2000), it was indicated that boys are diagnosed with ADHD more frequently than girls regardless of the population sampled. In his results the ratio of boys to girls diagnosed with ADHD is higher in referred sample than in none referred samples. Some researchers have proposed that this discrepancy is a reflection of boys typically exhibiting more disruptive behaviour than girls. (Arcea and Conners, 1998; Brederman, Mick, Faraone, Braaten, Doyle and Spencer 2002). In response to the question whether ADHD differs in occurrence with class level of pupils according to gender, the results (Table 3) proved that the prevalence across the class according to gender differs among primary 1, 2, 3, 4 and 5, while in primary 6 the percentage occurrence is the same for boys and girls. In primary 1 the prevalence

Table 2: Gender distribution by age in the sample population.

Class	Boys			Girls			Total		
	Sample size	ADHD present	Prevalence %	Sample size	ADHD Present	Prevalence %	Sample size	ADHD present	Prevalence %
5	16	3	18.75	8	3	37.50	24	6	25.00
6	25	5	20.00	11	4	36.36	36	9	25.00
7	23	10	43.50	15	4	26.67	38	14	36.84
8	25	3	12.00	22	3	13.64	47	6	12.77
9	30	9	30.00	27	2	7.41	57	11	19.29
10	54	12	22.22	36	4	11.11	90	16	17.78
11	30	3	10.00	22	7	31.82	52	10	19.23
12	33	13	43.33	29	9	31.03	62	22	35.48
Total	236	58	24.58	170	36	21.18	406	94	23.15

Table 3: Characteristics of sample showing ADHD diagnostic type.

Characteristics	Male frequency	Prevalence %	Female frequency	Prevalence %	Total %	ADHD population
Hyperactivity	28	11.86	17	10.00	45	47.87
Inattention	9	3.81	11	6.47	20	21.28
ADHD Combined type	21	8.90	8	4.71	29	30.85
Total	58	24.58	36	21.18	94	100.00

among boys is 22.64% while that of girls is 30.43% this shows a significant difference in the occurrence of ADHD among gender in that class. In primary 2, the prevalence percentage for boys is 25.00% and 21.34% for girls; primary 3 shows 25.00% for boys and 9.30% for girls, primary 4 has a prevalence of 20.00% for boys compared to girls with 22.22% and primary 5 has 19.23% for boys and 18.18% for girls, The above result shows that there is a difference in the occurrence of ADHD among gender in primary 1, 2, 3 and 4. The result for primary 5 shows no significant difference with boys scoring 19.23% and 18.18% for girls however the result for primary six shows the same degree of occurrence 35.71% for both boys and girls. It can be deduced that at some instance the occurrence of ADHD is the same for both boys and girls in the same class.

The findings also revealed that more boys had the symptoms of ADHD combined type than girls, though more girls were screened for inattention with a percentage of 6.47 and 3.81 for boys. However boys suffer more from hyperactivity and ADHD combined type with 11.86% and 8.90% than girls with 10.00% for hyperactivity and 4.71% for the combined type. Of the 94 respondents who screened positive for ADHD, 45 (47.87%) had the Hyperactivity type, 20 (21.28%) had the Inattention type and 29 (30.85%) had ADHD Combined type. The result confirms that pupils in primary schools suffer more from ADHD hyperactivity type. The sex ratio for combined type and inattention is 2:1, while hyperactivity is about 1:1. The results obtained in the present study are consistent, in many aspects, with those from previously published research using the DSM-IV criteria. Frequencies of the condition were within the same range as those reported in the literature. These findings suggest that there is a prevalence of ADHD in Edo State and the instrument used for its assessment are not affected by cultural variables.

CONCLUSIONS AND RECOMMENDATIONS

The study revealed the existence of ADHD among pupils in the target primary schools studied. It also showed a prevalence of 23.15% of ADHD among the primary school pupils. The results of the study revealed that more boys are diagnosed with ADHD than girls. The

prevalence among boys is 24.58% while that of girls is 22.18%. The findings of this study have implication for parents, teachers' curriculum planners and government. It was therefore recommended that parents and teachers should be adequately educated about the nature of ADHD so that adequate motivation will be given to make the child learn. Curriculum planners should make provisions for possible curriculum adaptations for children with ADHD and other learning disorders in the classroom. The findings suggest the possibility of gender-specific risks associated with high levels of inattention and hyperactivity-impulsive symptoms indicating that ADHD subtype membership should be considered when conducting ADHD gender comparisons.

Overall, these findings suggest that the prevalence of ADHD and the criteria used for its assessment are not affected by cultural variables. The estimates for prevalence found in this study are consistent with those reported in the literature, which suggests that ADHD is a valid diagnosis for primary school pupils in the sampled population.

Based on the findings of this study, it is recommended that there should be an update of the knowledge of teachers and parents through organised workshops on how and what to do when their pupils manifest defiant behaviour. This will help the teacher to properly assess the pupils and recognize those that manifest the symptoms of ADHD. Pupils who manifest ADHD symptoms should not be punished or bullied by the teachers or parents' rather special attention is required to making learning less difficult for ADHD pupils. The Faculty of Education in Colleges of Education and Universities should organize programmes on ADHD and include such programme in the school curriculum.

Counselling units should be established in primary schools in line with the provisions in the NPE. This will reduce most of the problems ADHD pupils face during learning tasks. The state should adopt educational laws and regulations that are pupil friendly and provide flexible approaches to placement of those with learning disabilities especially ADHD. This study will be most useful to parents and educators as well as other stakeholders to establish the importance of the knowledge of ADHD in identification, making referral for treatment and

the education of pupils with this disorder. The information generated from this study will also help educators to draw conclusions pertaining to the present knowledge of ADHD and use this information to determine the appropriate steps to provide more training and education on the identification of this disorder. It is hoped that this study will bring about programmes with which government agencies and reputable health organizations will educate parents and education stakeholders on Attention Deficit Hyperactivity Disorder. Finally, it is hoped that this study will provide Counsellors, Psychologists, Psychiatrists and other health providers enough information to assist children with Attention Deficit Hyperactivity Disorder.

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