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Teachers' knowledge of Attention Deficit Hyperactivity Disorder (ADHD) among primary school pupils in Delta State, Nigeria

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Abstract
Inability of pupils to pay full attention to what is being taught in the teaching-learning situation can mar the aims and objectives of "Education For All", thus, adequate knowledge of teachers on Attention Deficit Hyperactivity Disorder (ADHD) is required in order to introduce appropriate learning intervention that could facilitate pupils' learning in the classroom. In view of this, the study investigated the teachers' knowledge of ADHD among primary school pupils in Delta State. The study also examined the influence of variables of gender, job experience, educational status and school type on respondents' responses. This study is a descriptive in nature and survey design research method was thus adopted. Multi-stage sampling technique which comprises purposive, random and stratified sampling technique procedure was adopted to draw a total sample of 300 respondents from 12 primary schools in the three senatorial districts of Delta State. An adapted instrument (from Kleynhans, 2005) entitled "Knowledge of ADHD Questionnaire (KADHDQ)" was used to collect relevant data. Percentage was used to present the demographic data while hypotheses were analyzed using t-test and Analysis of Variance (ANOVA) at 0.05 levels of significance. The findings of the study revealed that primary school teachers in Delta State have low knowledge of ADHD among their pupils. The results of the hypotheses tested revealed no significant difference in the primary school teachers' knowledge of ADHD among their pupils in Delta State based on gender, job experience and school type, while significant difference was noted based on educational attainment. Based on the findings of this study, it was recommended that stakeholders in education system should include ADHD education in the training programmes of teachers, school authority should regularly organize seminars and conferences on ADHD for the teachers, Nigeria Ministry of Education should include at least 6 months training certification in ADHD as part of prerequisite to be a qualified teacher, school counsellors should be employed in all primary schools to help pupils with ADHD and students of Adult and Primary Education should be trained on ADHD in order to help the pupils.
Key terms: ADHD, Attention Deficit, Disorder, Hyperactivity

Background to the Study

Achieving positive outcome in teaching-learning process requires readiness (concentration and commitment) from part of the learner, with adequate help of the facilitator (teacher). No matter what effort teacher may invest in teaching however, students can learn better when they are

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ready to learn. Thus, perfect concentration is needed for children to be maximally benefited from the teachers' instruction in the classroom setting. However, studies (Mayes & Erkulwater, 2008; Plomp, Van Engeland & Durston, 2009) have established a disorder called Attention Deficit Hyperactivity Disorder (ADHD) as the most commonly diagnosed mental health disorder in children which has negatively tell on pupils academic performance. Ofovwe, Ofovwe and Meyer (2006) also reported higher prevalence of Attention Deficit/Hyperactivity Disorder (ADHD) among school children. According to American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV-TR, 2000), Attention Deficit/ Hyperactivity Disorder is a disruptive behaviour disorder characterized by persistent inattention and/or hyperactivity-impulsivity occurring in several settings repeatedly and more severely than is typical for individuals in the same age group. In view of Lahey, Applegate, McBurnett, Biederman, Geen-Hill and Hynd (1994) ADHD is a condition characterized by developmentally extreme and inappropriate levels of hyperactivity or impulsivity and inattention or disorganization with cross-situational impairment, including difficulties at home, at school and with social relationships. Attention Deficit Hyperactivity Disorder (ADHD), similar to hyperkinetic disorder is a psychiatric disorder (Lange, Reichl, Lange, Tucha & Tucha, 2010) of the neurodevelopmental type (Caroline, 2010) argue that ADHD is a psychological problem that associated with significant problems of attention, hyperactivity, or acting impulsively that are not appropriate for a person's age (Childress & Berry, 2012).

It should be understood that not all impatient or hyperactivity of children could be considered as ADHD because children may exhibit similar symptoms while under pressure in the classroom situations. While under pressure, bored, or tired according to Cooper and O'Regan (2001) most children will not be able to concentrate and can become easily distracted. Thus, characteristics of ADHD that are temporary, episodic and directly associated with situational factors should not be mistaken as the behaviour disorder.According to the DSM-IV-TR, an ADHD diagnosis is warranted when the person meets either six or more symptoms of inattention and/or six or more symptoms of hyperactivity/impulsivity (American Psychiatric Association (APA), 2000). Symptoms of inattention include difficulty sustaining attention, not following instructions, forgetfulness, easily distracted and difficulty with organization. Symptoms of hyperactivity/impulsivity include fidgeting, talking excessively, difficulty engaging in leisure activities quietly, blurting out answers, and difficulty waiting turn. Furthermore, these symptoms must be present before age seven and create impairment in at least two different settings (APA, 2000). In addition, other likely external disorder that are likely to be apparent in children with ADHD include Conduct Disorder (CD) or Oppositional Defiant Disorder (ODD) (Wallis, Russell & Muenke, 2008). According to Biederman, Newcorn and Sprich (1991), about 20% of children with ADHD also have a CD and about 30% to 45% have ODD. Learning Disorders and Communication Disorders are also co-occurring disorders among children with ADHD.Biederman and Faraone (2004) stated that attention-deficit/hyperactivity disorder (ADHD), is characterized by inattention, hyperactivity and impulsivity and is a common neuropsychiatric disorder worldwide among children and adolescents, with a prevalence in the range of 5% to 10% in Western countries (Faraone,

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Sergeant, Gillberg & Biederman, 2003) and 7.5% in Taiwan (Gau, Chong, Chen & Cheng, 2005). Another author estimated the prevalence of ADHD as high as ten percent or a total of three million children between five and 12 years of age (Millichap, 1998). Children in North America appear to have a higher rate of ADHD than children in Africa and the Middle East; this is believed to be due to differing methods of diagnosis rather than a difference in underlying frequency (Polanczyk, de Lima, Horta, Biederman & Rohde, 2003). If the same diagnostic methods are used, the rates are more or less the same between countries (Tsuang, Tohen & Jones, 2011). Varying causes of ADHD have been identified by the experts such genetics (Gizer, Ficks, Waldman, 2009; Kebir, Nikolas & Burt, 2010). In the Twin studies which indicate that the disorder is often inherited from one's parents with genetics determining about 75% of cases (Burt, 2009). According to Thapar et al., (2005), siblings of the children with the disorder also have a three to fivefold increase in risk for ADHD; environment such as alcohol intake during pregnancy, very low birth weight, premature birth and early adversity also increase the risk (Thapar, Cooper, Jefferies, Stergiakouli, 2012); society e.g a child who has experienced emotional abuse; pathophysiology i.e, functional impairments in some of the brain's neurotransmitter systems, particularly those involving dopamine and norepinephrine (Malenka, Nestler & Hyman, 2009). Studies such as Biederman, Mick and Faraone, (2000); Rasmussen and Gillberg (2000) have noted that ADHD in children could continue into adolescence and adulthood, which can lead to medication dependency and a lifetime of treatment. ADHD can cause problems in the children's social, academic and work life. It has a major impact on society including financial costs, disruption to schools and the possibility of criminal behaviour and substance abuse (Biederman et al., 1991). According to DeShazo, Lyman and Klinger (2002) elementary school children with ADHD were more likely to show decreased academic performance, educational problems and underachievement. Due to the educational, developmental and behavioural problems in children with the disorder, the demands and energy involved in caring for ADHD children can cause significant stress on the family and marital functioning (Keown & Woodward, 2002; Peters, Calam & Harrington, 2005).Pupils with ADHD more often have difficulties with social skills, such as social interaction, forming and maintaining friendships (APA, 2013). About half of children and adolescents with ADHD experience social rejection by their peers compared to 10–15% of non-ADHD children and adolescents. Pupils with ADHD have attention deficits which cause difficulty processing verbal and nonverbal language which can negatively affect social interaction. They also may drift off during conversations and miss social cues (Coleman, 2008). Some other studies have shown an association of ADHD with factors such as obesity, depression, anxiety, sex, age, race, asthma, cigarette smoking, family structure and socio economic status (SES) (Freeman-Fobbs, 2003; Milberger,et al, 1997). Kollins, McClernon & Fuemmeler (2005) also discovered that having ADHD increases the chance of early initiation of smoking habit in children.It has been suggested that many people with ADHD, as high as 60% in some studies, continue to have clinically significant symptoms of ADHD when they become adults (Biederman, Mick & Faraone, 2000; Rasmussen & Gillberg, 2000). Several longitudinal studies have also shown that youths with ADHD were more likely to have poor grades on report cards, fail grades, have lower class rankings and

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perform poorly on standardized academic achievement tests when matched to non-ADHD controls (Barkley, Fischer, Edelbrock, & Smallish, 1990).Many clinical scientists from various countries now also hold the view that there are two additional problems at the heart of ADHD, namely difficulties following rules and instructions and excessive variability or inconsistency in responses to situations (Accardo, Blondes, Whitman & Stein, 2000). ADHD presents many challenges, both for the pupils who grapple with it as well as for society. ADHD saddles pupils with an increased risk of accidents, drug abuse in later life, failure at school, antisocial behaviour, criminal activity and is associated with problems like anxiety, various learning disabilities, speech or hearing deficits, obsessive-convulsive disorders and/or behavioural problems such as oppositional defiant disorder (ODD) or conduct disorder (Framingham, 2014).Several studies have established low knowledge of teachers about ADHD. The study of Alkahtani (2013) indicated that teachers' knowledge of ADHD was insufficient. Teachers' level of knowledge of ADHD was positively related to their prior training and experience with ADHD (i.e., the number of ADHD courses taken in college or graduate level, and the number of workshops pertaining to ADHD). Teachers' level of knowledge of ADHD also correlated positively with their level of confidence in teaching a student with ADHD. The findings of Brook, Watemberg and Geva (2000) also revealed a relatively low general knowledge of Attention Deficit Hyperactivity Disorder (71%) and about learning disability (74%). Thirteen percent of all teachers considered LD to be the result of parental attitudes, namely 'spoiling' the children. The score for attitude and understanding of ADHD children was relatively low (72.5%) for both groups, whereas Group B teachers scored higher regarding LD cases. There was no correlation between teachers, knowledge of ADHD and LD and their attitude. The main sources for this knowledge were: specialized textbooks, continuous education, TV shows, journals and newspapers, and medical personnel.Similarly, Ghanizadeh, Bahredar and Moeini (2006) found relatively low knowledge about ADHD among elementary school teachers. 46.9% of respondents agreed that ADHD is due to biological and genetic vulnerabilities and causation. 53.1% of all the teachers considered ADHD to be the result of parental spoiling. The attitude score towards ADHD children was also low. 64.8% agree that the same disciplinary rules used for all students should also be applied to ADHD children. 77.6% believe that ADHD students experience difficulties in their relations with their classmates. There was a significant correlation between teachers' knowledge of ADHD and their attitude. The main sources of knowledge about ADHD were: Television and radio; friends and relatives; periodical, newspapers and magazines.Results of Vereb and DiPerna (2004) indicated that teachers' participation in ADHD training was positively correlated with knowledge of ADHD and acceptability of behaviour management strategies. Teachers' knowledge of ADHD, years of teaching experience with students with ADHD, and training demonstrated positive relationships with ratings of medication acceptability. Overall, fewer positive relationships were observed than predicted. Kleynhans (2005) studied primary school teachers' knowledge and misperceptions of attention-deficit/hyperactivity disorder (ADHD). The findings of the study revealed that overall knowledge of ADHD is significantly related to teachers' sense of self-efficacy and to their exposure to ADHD as a childhood disorder (e.g. teaching a child with ADHD, attending workshops on ADHD, extra

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reading about this disorder, assessment of medication and the number of hours allocated to ADHD in their initial training as a teacher).Low knowledge of teachers about ADHD could be dangerous as the classroom teachers are of the most valuable source of information regarding identifying learners with ADHD and diagnosis. This is because of their daily long interaction with the pupils. Sciutto, et. al., (2000) opined that the society nowadays places strong demands on the regulatory skills of the children, so when ADHD (problems with attention span, impulse control and activity level) frequently interfere with learners activities in the classroom and socially (DuPaul & Stoner, 2003), it makes the work of teachers more tasking and demanding because the success of teacher lies in the ability of the learners to act upon what has been learnt in the classroom setting. Otherwise, aims and objectives of learning may not be realized. To this end, the teachers' knowledge of attention deficit hyperactivity disorder is therefore imperative for investigation in order to understand its impact on pupils learning.

Statement of the Problem

Attention Deficit Hyperactivity Disorder or ADHD is one of the most commonly diagnosed childhood behavioural disorders. Reliable associations have been identified with a wide spectrum of negative outcomes, including academic underachievement, conflictual parent-child interactions and elevated rates of accidental injuries (Mannuzza & Klein, 1999) as result of excessive running and climbing.

Gordon, Barkley, Faraone, Lewandowski and Murphy (2005) reported that children with ADHD are less likely to comply with parental requests and less likely to cooperate which in turn may negatively tell on the parents as Johnston and Mash (2000); Chronnis (2004) have posited that parents of children who have ADHD are 2 to 4 times more likely to have mental health problems such as depression, anxiety and substance abuse, high rate of self-blame and social isolation. ADHD in children could persist through adulthood. If they are not adequately treated at childhood, they may enter partial remission of the disorder, while others may have trouble with time management and organization at adulthood (Young & Amarasinghe, 2009). Anxiety, emotional liability, anger, frustration and sleep problems are more likely in adults with ADHD. Likewise, minimal foresight about potential consequences causes pupils with ADHD to have a greater propensity to be involved in risky sexual activity, substance abuse and auto accidents (Swensen, Birnbaum, Hamadi, Greenberg, Cremieux and Senk, 2004). This is a compounding problem for sociological, psychological, mental and physiological aspects of children, parents and family lives which could be an impediment to a stable/continuous growth and development of the nation. There is thus the need for adequate knowledge of primary school teachers in Nigeria to assist these students in achieving educational objectives. Very few studies have been done in Nigeria and in Delta State to examine children attention deficit hyperactivity disorder. For instance, Ofovwe et al. (2006) asserted that their study seems to be the first in the area of ADHD from Nigeria. The study was on the prevalence of ADHD among school-aged children in Benin City, Nigeria. The results of the study revealed that male Nigerian children who participated in the study had a higher prevalence rate. They concluded that the results strengthen earlier observations that there is no significant geographical variation on the prevalence of ADHD if common definitions and diagnostic tools are employed.Morayo (2014) investigated the knowledge and attitudes towards Attention Deficit Hyperactivity Disorder among

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primary school teachers in Lagos State, Nigeria. Findings revealed a deficiency in teachers' knowledge of ADHD as well as negative attitudes to pupils with ADHD among primary school teachers. It was also found that teachers' level of education, length of service and exposure to training on ADHD all have significant influence on the perceived knowledge of and attitudes to pupils with ADHD.

Olusakin, Osarenren and Obi (2008) wrote a theoretical paper entitled "towards helping children with attention deficit hyperactivity disorder (ADHD) to enjoy peaceful schooling" where the symptoms of ADHD were pointed out and the specific ways in which teachers and parents could help these group of children were discussed. They concluded that since a child with ADHD may be able to focus when he/she is receiving frequent reinforcement, there is thus the need to work with parents and the community. In order to extend the scope of studies on ADHD, the researchers have deemed it feet to investigate the knowledge of teachers on Attention Deficit Hyperactivity Disorder (ADHD) among primary school pupils in Delta State, Nigeria.

Research Questions

Based on the problem of the study, the following research questions were posed to guide the conduct of the study:

1. Do primary school teachers have knowledge of Attention Deficit Hyperactivity Disorder among their pupils in Delta State?

Research Hypotheses

The following hypotheses were postulated to be tested in the study:

1. There is no significant difference in the male and female primary school teachers' knowledge on ADHD among their pupils in Lagos State.
2. There is no significant difference in the knowledge of primary school teachers on ADHD among their pupils in Lagos State based on year of job experience.
3. There is no significant difference in the knowledge of primary school teachers on ADHD among their pupils in Delta State based on level of educational attainment.
4. There is no significant difference in the knowledge of primary school teachers on ADHD among their pupils in Delta State based on school type.

Methodology

Descriptive survey research method was adopted for this study. Descriptive survey according to Akindutire (2009) is a process of collecting data in order to test hypothesis or to answer questions concerning the current status of the subject of the study. The choice of descriptive survey design was based on the fact that this study is aimed at finding out whether or not primary school teachers have adequate knowledge of Attention Deficit Hyperactivity Disorder among the pupils.

The population of this study comprises all the entire primary school teachers in Delta State. The target population for the study on the other hand consists of 12 primary schools teachers from three senatorial districts of Delta State. The sample for this study is 300 primary school teachers. The technique used in selecting the sample is multi-stage sampling technique. At stage 1, purposive sampling technique was used to select purposively four primary schools from each of the three senatorial districts of Delta State. The public primary schools with more population of pupils were deliberately considered. At stage 2, simple random sampling method was used to select 25 primary school teachers from each primary school. This gave all the four primary schools teachers equal chance of being selected without any bias or favour. At stage 3, stratified sampling method was used to categorize the respondents into various groups of interest of the researcher such as

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gender, job experience, level of educational attainment and school type.

Instrumentation

For the purpose of this study, questionnaire was used as a measuring device which was adapted from the previous work of Kleynhans (2005) and the questionnaire was tagged "Knowledge of Attention Deficit Hyperactivity Disorder Questionnaires (KADHDQ). The questionnaire therefore consists of 2 sections; A and B. Section A: focused on the demographic data of respondents which include information on gender, job experience, level of educational attainment and school type. Section B on the other hand, consists of twenty (20) pertinent items that seek information on the general knowledge of Attention Deficit Hyperactivity Disorder of the respondents. The researcher used a rating scale format of: Very True (VT) = 4 points; True (T) – 3 points; Partially True (PT) = 2 points and Not True (NT) = 1 point.

The highest score for an item is 4, while the least score anybody can get on an item is 1. The average point = 4+3+2+1 = 10/4 = 2.5. Therefore, the average mean score is 2.5, any score ranging from 2.5 and above will be considered as adequate knowledge of ADHD while scores lower than 2.5 will be considered as little or no knowledge of ADHD.

Validity

Ibrahim, Laudu and Opadokun (2004) described validity as the extent to which an instrument can be relied upon to do what it is purported to do accurately. To ascertain the validity of the instrument, some copies of drafted questionnaire were given to experts in the Departments of Adult and Primary Education, Counsellor Education and Measurement and Evaluation in Federal College of Education, Asaba for scrutiny and necessary corrections. Necessary modifications were made and the instrument was adjudged valid for use.

Reliability

Reliability of an instrument refers to the consistency with which an instrument measures what it purports to measure (Akindutire, 2009). The questionnaire was administered on 20 primary school teachers in Agbo who did not form part of the study but possess the similar characteristics of the subject under study. After a period of four weeks, the same questionnaire was re-administered on the same group of teacher. The two sets of scores obtained on the two occasions were correlated using Pearson Product Moment Correlation Coefficient (r) statistical method. The value obtained was 0.66 at 0.05 level of significance. Thus, established the instrument reliable for the study.

Procedure for Instrument Administration and Data Collection

The method of data collection involves effective administration of instrument. Before such administration, consultations were made with the authorities of the schools involved in the study and permissions were sought accordingly through writing before the test administration was conducted. This therefore afforded the researchers to have good rapport with the respondents, enlightened them on the exercise and allowed prompt responses to areas of difficulties. The administered questionnaire forms were collected immediately after the teachers finished responding for the items of the questionnaire.

Data Analysis

Frequency counts and percentage was used to analyze the demographic data and to answer the main research question. t-test and Analysis of Variance (ANOVA) were used to test the hypothesis postulated. Adana (1996) defined t-test as a parametric test most often used by researchers to

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compare two different groups. In view of this, hypotheses 1 and 4 were tested using t-test for the fact that their variables have only two means. While hypotheses 2 and 3 was tested using Analysis of Variance (ANOVA) as a means of comparing mean score of groups that have more than two variables.

Results

Table 1: Distribution of Respondents Based on Gender, Job Experience, Educational Status and School Type.

S/N	Variables	Frequency	Percentage %
1.	**Gender**		
	Male	117	39.0
	Female	183	61.0
	Total	**300**	**100.0**
2.	**Job Experience**		
	1-5 years	46	15.3
	6-10 years	243	81.0
	10 years & above	11	3.7
	Total	**300**	**100.0**
3.	**Educational Status**		
	Pry/Sec. Certificate	42	14.0
	Grade II/NCE	134	44.7
	HND/Degree	116	38.7
	PG Certificate	8	2.7
	Total	**300**	**100.0**
4.	**School Type**		
	Private	122	40.7
	Public	178	59.3
	Total	**300**	**100.0**

Table 1 presents the demographic information of the respondents. The table shows that more female 183 (61.0%) than male 117 (39.0%) participated in the study. Respondents' job experience revealed that 46 (15.3%) were within 1-5 years in service, 243 (81.0%) were within 6-10 years while 11 (3.7%) have spent 10 years and above in service. 42 (14.0%) of the respondents were primary/secondary school certificate holders, 134 (44.7%) were Grade II/ND holder, 116 (38.7%) were HND/Degree graduate while 8 (2.7%) possessed post graduate certificate. Among the respondents, 122 (40.7%) were from private schools while 178 (59.3%) were from public schools.

Research Question: Do primary school teachers have knowledge on Attention Deficit Hyperactivity Disorder among their pupils in Lagos State?

Table 2: Mean and Rank Order on Teachers' Knowledge of ADHD

Items No	Statement	Mean	Rank
16	In order to be diagnosed as ADHD, a child must exhibit relevant symptoms in two or more		

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	settings (e.g. home, school)	2.58	1st
3	Children with ADHD are more distinguishable from normal children in a classroom setting than in a free play situation	2.43	2nd
2	ADHD children generally experience more problems in unfamiliar situations than in familiar situations	2.43	2nd
15	Symptoms of depression are found more frequently in ADHD children than in non-ADHD children	2.38	4th
1	ADHD children often have difficulties organizing tasks and activities	2.34	5th
20	Most ADHD children retain their symptoms by the onset of puberty and subsequently not function normally in adulthood	2.24	6th
11	It is uncommon for ADHD children to have an inflated sense of self-esteem or grandiosity	2.23	7th
8	In order to be diagnosed with ADHD, the child's symptoms must have been present before age 7	2.23	7th
4	The majority of ADHD children evidence some degree of poor school performance in the elementary school years	2.20	9th
14	Current wisdom about ADHD suggests two clusters of symptoms: One of inattention and the other consisting of hyperactivity impulsivity	2.17	10th
6	The characteristics of a gifted child and a child with ADHD are often similar	2.16	11th
17	If an ADHD child is able to demonstrate sustained attention to video games or TV for over an hour, that child may still be unable to sustain attention for at least an hour of class or homework	2.14	12th
7	ADHD children are frequently distracted by extraneous stimuli	2.08	13th
9	One symptom of ADHD children is that they have been physically not cruel to other people	1.99	14th
19	ADHD cannot be reliably diagnosed via use of behavioural rating scales (e.g. Conners)	1.96	15th
5	Children with ADHD generally can still display a flexible adherence to specific routines or rituals	1.91	16th
10	ADHD children often fidget or squirm in their seats	1.89	17th
18	Symptoms of ADHD are often seen in non-ADHD children who come from inadequate and chaotic home environments	1.67	18th

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13	ADHD children do not have a history of stealing or destroying other people's things	1.51	19th
12	It is possible for an adult to be diagnosed with ADHD	1.47	20th

Table 2 presents the mean and rank order of teachers' responses on knowledge of ADHD among primary school pupils. The table shows that item 16 (with mean score of 2.58) was ranked 1st. While other items have mean score lower than 2.50. The item stated that "in order to be diagnosed as ADHD, a child must exhibit relevant symptoms in two or more settings (e.g. home, school)". This means that teachers' knowledge about ADHD was only on the likely symptoms a child may exhibit. Since 19 out of the 20 items have means scores lower than 2.50, it can therefore be concluded that primary school teachers in Delta State have very low knowledge of ADHD among their pupils.

Hypothesis One: There is no significant difference in the male and female primary school teachers' knowledge on ADHD among their pupils in Lagos State.

Table 3: Mean, Standard Deviation and t-test Showing the Difference in the Male and Female Respondents' Knowledge of ADHD

Variables	N	Mean	SD	df	Cal. t-value	Crit. t-value
Male	117	40.39	18.54			
				298	1.31	1.96
Female	183	43.03	16.04			

Table 3 presents t-test result of difference in respondents knowledge of ADHD based on gender. The table shows that the calculated t-value of 1.31 is less than the critical t-value of 1.96. This implies that no significant difference exist, thus, the hypothesis is accepted.

Hypothesis Two: There is no significant difference in the knowledge of primary school teachers of ADHD among their pupils in Lagos State based on year of job experience.

Table 4: ANOVA Showing Respondents' Knowledge of ADHD Based on Year of Job Experience

Source	df	SS	MS	Cal. F-ratio	Crit. F-ratio
Between Groups	2	1470.517	735.258	2.55	3.00
Within Group	297	85736.480	288.675		
Total	299	87206.997			

Table 4 presents difference in the respondents' knowledge of ADHD based on year of job experience. The table revealed that the calculated F-ratio of 2.55 is less than the critical F-ratio of 3.00. This means that no significant difference exist, thus, the hypothesis is accepted.

Hypothesis Three: There is no significant difference in the knowledge of primary school teachers on ADHD among their pupils in Lagos State based on level of educational attainment.

Table 5: ANOVA Showing Respondents' Knowledge of ADHD Based on Educational Attainment

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Source	df	SS	MS	Cal. F-ratio	Crit. F-ratio
Between Groups	3	3181.626	1060.542	3.74*	2.60
Within Group	296	84025.370	283.869		
Total	299	87206.997			

* Significant at 0.05 alpha level

Table 5 presents difference in the respondents' knowledge of ADHD based on educational attainment. The table revealed that the calculated F-ratio of 3.74 is greater than the critical F-ratio of 2.60. This implies that significant difference exist, thus, the hypothesis is rejected. A further examination of the group difference was carried out using Duncan Multiple Range Test (DMRT) as seen below.

Table 6: DMRT Showing the Magnitude of Difference in the Respondents' Knowledge of ADHD Based on Educational Attainment.

Duncan Grouping	N	Mean	Group	Edu. Attainment
A	134	45.37	1	Grade II/NCE
B	42	41.93	2	Pry/Sec. Certificate
C	8	40.50	3	PG Certificate
D	116	38.24	4	HND/Degree

Table 6 presents the magnitude of difference in the teachers' knowledge of ADHD based on educational attainment. The table shows that group 1 (with mean score of 45.37) is significantly different from groups 2, 3 and 4 with mean scores of 41.93, 40.50 and 38.24 respectively that were slightly different from one another. The interpretation of this is that the Grade II/NCE teachers' responses contributed largely to the difference noted in table 5.

Hypothesis Four: There is no significant difference in the knowledge of primary school teachers on ADHD among their pupils in Lagos State based on school type.

Table 7: Mean, Standard Deviation and t-test Showing the Difference in the Respondents' Knowledge of ADHD Based on School Type.

Variables	N	Mean	SD	df	Cal. t-value	Crit. t-value
Private	122	43.08	16.73			
				298	0.91	1.96
Public	178	41.26	17.32			

Table 7 presents t-test result of difference in respondents knowledge of ADHD based on school type. The table shows that the calculated t-value of 0.91 is less than the critical t-value of 1.96. This indicates that no significant difference exist, thus, the hypothesis is accepted.

Discussion

Basically, the findings of the study revealed that primary school teachers in Delta State have low knowledge of ADHD among their pupils. Their low knowledge of ADHD may be due to the fact that it is a salient disorder that could not be easily detected by a lay person except for those who have been trained on how to detect it in pupils during teaching-learning situation. This implies that rarely is there any specific training/workshops or conferences where many Nigerian teachers are being trained to

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be able to observe pupils whose academic performances are hampered by ADHD. However, the finding of this study is in line with the result of Ghanizadeh, Bahredar and Moeini (2006) whose study found relatively low knowledge about ADHD among elementary school teachers. Similarly, Morayo (2014) found deficiency in teachers' knowledge of ADHD among their pupils.

Based on the hypotheses tested, the findings revealed that there is no significant difference in the male and female teachers' knowledge of ADHD. This indicates that irrespective of the respondents gender, their knowledge about ADHD among their pupils remain very low. The finding of the study is in contrast with the study of Pentecost and Wood (2002) where significant difference was discovered based on gender. They noted that female were more likely to incorrectly deem aggression toward others as a symptom of AD/HD and male were more likely to incorrectly deem annoying habits as typical ADHD behaviour.

The second hypothesis revealed also no significant difference in the knowledge of primary school teachers on ADHD among their pupils based on job experience. The means that respondents job experiences has no influence on their knowledge of ADHD among the pupils. This finding is incongruent with the study of Morayo (2014) whose finding revealed significant difference in teachers' knowledge of ADHD based on years of job experience.

Hypothesis three indicated a significant difference in the knowledge of primary school teachers on ADHD among their pupils based on educational attainment. This implies that respondents' level of educational attainment have influence on their knowledge of ADHD. Based on the result of the findings, respondents of Grade II/NCE were responsible for the difference in responses. The implication of this is that their level of training is not enough to actually notice the symptoms of ADHD among pupils in the classroom setting. However, this finding corroborate the finding of Alkahtani (2013) where teachers' level of knowledge of ADHD was positively related to their prior training and experience with ADHD (i.e., the number of ADHD courses taken in college or graduate level, and the number of workshops pertaining to ADHD).The fourth hypothesis revealed no significant difference in the knowledge of primary school teachers on ADHD among the pupils based on school type. This means that the teachers' knowledge of ADHD from both private and public primary schools is not different. This suggests that teachers from both the school types are not well trained on recognizing symptoms of ADHD among pupils.

Conclusion

The findings of this study have revealed a low knowledge of primary school teachers on ADHD among pupils in Delta State, Nigeria. The hypotheses tested revealed no significant difference in the teachers' knowledge of ADHD based on gender, job experience and school type, while significant difference was discovered based on educational status. This therefore implies that there is need for extensive training of teachers on ADHD so as to be able to help children with this disorder and consequently achieving the aims and objectives of teaching-learning situation.

Recommendations

Based on the finding findings of this study, the researcher therefore recommended that:

1. The stakeholders in tertiary education should include as part of their training programme, special education on symptoms, diagnoses, causes, effects and treatments of ADHD in children. This will prepare them adequately for their future endevour as teachers, thus, be able

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to identify pupils with such disorder, help them or otherwise refer them to appropriate quarters for help.

2. Seminars, conferences and workshops should be organized regularly by the school authorities for the primary school teachers on the general knowledge of ADHD so that they may be able to help pupils to achieve in the teaching-learning process.
3. The Nigeria government under the Ministry of Education should include as part of the criteria for one to be a qualified teacher, certificate in a 6 months training on knowledge of ADHD. This will help the teachers to be able to identify children with this problem and therefore adjusting their teaching methods to help such pupils to achieve in the classroom setting.
4. School counsellors should be employed in every primary school at both public and private level in order to be able to quickly identify children with ADHD and provide necessary counselling intervention to help them adjust effectively to themselves, peers, teachers and the environment.
5. The students of adult and primary education should also be taught about the knowledge of ADHD so that they may be able to utilize the knowledge to help pupils with this disorder, therefore, contributed to the pupils' success in educational pursuits.

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