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CHARACTERISTICS BEHAVIOURS AND FACTORS RESPONSIBLE FOR ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) AMONG SENIOR SECONDARY SCHOOL STUDENTS IN RIVERS STATE, NIGERIA

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Abstract:
The study investigated teachers' perception of characteristics behaviours and factors responsible for attention deficit hyperactivity disorder (ADHD) among Senior secondary school students in Ikwerre Local Government Area of Rivers State, Nigeria. The researchers adopted descriptive research design. The study had three (3) purpose of study, three (3) research questions and two (2) hypothesis. The population consists of 13,950 senior secondary school students in the thirteen (13) public senior secondary schools in the Local Government Area under study. Taro Yamen's formula for determination of sample size was used to obtain a target population of 400 as sample size with the aid of the stratified random sampling technique. The SNAP IV ADHD rating scale and DBDRS developed by Swansen Nolan and Pelham was used as research instrument renamed as characteristics behaviour and factors responsible for attention deficit hyperactivity disorder questionnaire (CBFRADHDQ). The instrument was validated by experts in the field of measurement and evaluation. The reliability coefficient value of 0.92 was established through Pearson's Product Moment Correlation co-efficient. The data was analyzed through mean and standard deviation for the research questions and t-test for the hypothesis. The study found that the factors responsible for ADHD ranged from nature to nurture, genetic/neurological factors and environmental factors among others. It was also confirmed as part of the findings that there are no professional special needs educators in schools to address such cases. It was

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therefore recommended that all public schools as a matter of urgency should establish special needs education and educational technology department in an inclusive setting both in rural and urban schools among others.

Keywords: teacher's perception, characteristic behaviours, attention deficit hyperactivity disorder (ADHD), special needs educators

1. Introduction

Education constitutes the overall development of the worth of an individual in specific and the society in general. Through education an individual is prepared for useful living, sound, effective and integrated into the society. Education moulds the child or learner into appropriate desirable behaviour. It is on this premise that education focuses on the learner to be physically, emotionally and all-round readiness to learn with good and sound frame of mind. It also means that for learners to achieve the school should provide an enabling learning environment that will cater for all learners in an inclusive education with the aim of attending to different special needs of the learners in order to reduce and manage learning disabilities of the learners. Learning disabilities is a problem that impedes learning at all levels and then affects their schooling and adjustment to society (Lerner, 2011). The National Joint Committee on Learning Disabilities (NJCLD, 1998) and Interagency Committee on Learning Disabilities (ICLD, 1994) identified a learner with disability on the ground that an evaluation team discovered a server discrepancy between the student achievement and intellectual ability in one or more of several areas, such as oral expression, listening, comprehension, writing expression, basic reading skills, reading comprehension, mathematics, calculation and reasoning.

The National Centre for Mental Health (NMCH, 2009) posited that learning disabilities affects people from different stages of life, such as pre-schoolers, elementary-age students, adolescents and adults manifest different problems and characteristics yet no individual will exhibit all characteristics. From the ongoing, it has been observed that the age range has expanded over the years and each age group requires different interventions and teaching strategies since certain disabilities are more prevalent than others at a particular age. It has been observed from researches that there are as many girls with learning disabilities as there are boys (National Institute of Mental Health, (NIMH) 2008). Learner (1993) on the other hand stated that the notion of multiple intelligences suggests that students with learning disabilities have other kinds of intelligences not recognized by schools. The percentage of children with learning disabilities in school are 5.6 percent for ages 6 and 21. More students are presently classified as having learning disabilities as well as adolescents and adults in the society. Larry 1999 stated that twenty percent (20%) of children with learning disabilities also have Attention Deficit Hyperactive Disorder (ADHD). That ADHD is a common co-occurring condition for children with learning disabilities. It is the most commonly diagnosed behavioural problem in school children which affect their learning in a

conventional school setting. Fletcher (2000) in his research confirmed that between 25 and 40 percent of the children with disabilities have co-occurring ADHD. ADHD can be conceived as a condition of the brain that makes it difficult for children to control their behaviour in school and social settings. It is one of the most common chronic conditions of childhood and affects between 4 and 12 percent of all school age children. Agomoh (2011) opined that the case of ADHD is about three times more of boys than girls are diagnosed. For such diagnosed cases the children forget homework, daydream during class, act without thinking, get fidgety at the dinner table. Thus, other symptoms as in attention, impulsivity and hyperactivity are not in exception. The ADHD can pose problems at home and school based, on this some learners are referred to mental health professionals. While it is considered as most prevalent problems of childhood, Grant 1995 stated that the consensus of professional opinion is that approximately 3 to 5 percent of children have ADHD and that this translates to many as two million school age children. It is on this premise that the researchers are interested in finding out the characteristic behaviours and factors responsible for ADHD among secondary school students in Ikwerre Local Government Area of Rivers State.

1.1 Statement of the Problem

Learners are always active; they try to get ready whenever they are learning. One of the factors that can have a substantial impact on their academic performance and their degree of motivation is Attention Deficit Hyperactive Disorder (ADHD). This debilitating neurobiological disorder affects child's ability to focus and control their behaviour contributing significantly to the child's daily progress and performance in the classroom as such school literally becomes a stacked deck for the child with ADHD. The council for exceptional children indicates that nearly 10 percent of school-aged children struggle with ADHD. The majority of these students also have some sort of academic learning disability. So, their inability to sit still in class is complicated by their difficulty in mastering the content of the curriculum; which is pertinent to curriculum planners and instructional designers. Thus, it has been observed that children with ADHD tend to fail at a rate 250 percent higher than their peers without ADHD, and nearly half of them will be required to repeat a class. The frustration these ADHD learners face is exacerbated by the fact that the skills that they lack are precisely the skills they need to excel academically in school, as such the ADHD children are often exceedingly bright, but unaware of the discrepancy between their potential and their academic performance. Bynum (2002) commenting on ADHD traced the nature and nurture theory to a psychologist Francis Galton (1869), who referred to biological and genetic constitution to impact on human traits and influences from ones' environment which interferes with human proper development. There could be other related factors that actually exist. Thus the research is to consider the teacher's perception of the characteristic behaviour and factors responsible for ADHD among Senior secondary students in a particular local government area, in which the result will act as an implication for curriculum planners, instructional designers and special needs education.

1.2 Significance of the Study

The result of the study will be of immense benefit to the special needs child with ADHD, government, parents, school administrators/proprietors, senior secondary school teachers in both special, general and inclusive schools. It will guide the special needs educator as baseline information which will help him develop better strategies to handle students based on identified factors. The result will guide the government to ensure the implementation of the objectives of national policy on education for exceptional children or children with special needs by supplying or providing the available statistics needed. It will encourage proprietors to use the information obtained from the research to map out ways of tackling the learning disorder associated with ADHD. Policies will be formulated based on the result obtained on the understanding, management and integration of such individuals in the society. The result will enhance curriculum planners and instructional designers on the content of the curriculum and instructional materials that can be utilized in teaching and learning of ADHD students. The information contained in this study will act as a reference material for future researchers.

1.3 Purpose of the Study

The purpose of the study is to investigate the teachers' perception of characteristics behaviour and factors responsible for deficit hyperactivity disorder (ADHD). In specific terms the study will consider the following:

1) To identify the factors responsible for ADHD among secondary school students in Ikwerre Local Government Area of Rivers State.
2) Determine the abnormal behavioural pattern of secondary school students living with ADHD in Ikwerre Local Government Area of Rivers State.
3) Identify the curbing strategies employed by students living with ADHD in the Local Government Area under study.

1.4 Research Questions

1) What are the factors responsible for ADHD among secondary school students in Ikwerre Local Government Area of Rivers State?
2) What are the abnormal behavioural patterns of secondary school students living with ADHD in the local government area under study?
3) What are the strategies employed to curb ADHD among senior secondary school in Ikwerre Local Government Area of Rivers State?

1.5 Research Hypotheses

The following hypotheses stated in the null form are formulated to guide the study.

1) There is no significant difference in the factors responsible for ADHD between school location (rural and urban) in Ikwerre Local Government Area.
2) There is no significant difference in the factors responsible for ADHD based on gender (male and female) in Ikwerre Local Government Area.

1.6 Study Area

This study was conducted in Ikwerre Local Government Area of Rivers State in Nigeria and African continent. The local government is one of the 23 local governments in Rivers State with Port Harcourt Local Government as the headquarters of the state. It is situated in the southern part of Nigeria. It is bounded by four local governments namely: Eleme on the East, Asari-Toru on the West and Okirika on the South. The inhabitants speak mainly Ikwerre and English language. There exist inflow and outflow movements of people. It is one of the mainland local governments in the state. The local government is made up of 13 secondary schools both in the rural and urban areas. Census of 2016 showed that people constituted the entire populations of 265,400 from Wikipedia.

2. Review of Related Literature

2.1 The Concept of Attention Deficit Hyperactivity Disorder

The ADHD or Attention Deficit Hyperactive Disorder (ADHD) is a condition of the brain that makes it difficult for children or carriers to control their behaviour in school and social settings. According to American Academy of Paediatrics (AAAP, 2001), "*ADHD is one of the most common chronic conditions of childhood and affect-between 4 and 12 percent of all school age children*". About three times more boys than girls are diagnosed with ADHD. Two different terms are used to refer to this condition, firstly, Attention Deficit Disorder (ADD) is used by the U.S Department of Education and many of the schools and secondly Attention Deficit Hyperactivity disorder (ADHD) is taken from the diagnostic criteria in the diagnostic and statistical manual of mental disorders. Thus ADD/ADHD affects children in all areas, disrupting the child's home, life education, behaviour and social life. At home Wiliam (2010) opined that children with this condition have difficulties accommodating home routines and parents' expectations. In school they have trouble completing their class work, missing valuable information. Their social interaction may be undermined by their impulsivity, hyperactivity and inattention, hampering their ability to make and keep friends. Research suggests that the prevalence rate is equal for boys and girls, but boys are more likely to be identified (Austen, 2001). The problem exhibited by such children makes them require special attention. Thus, the U.S Department of Education (1991) declared that children with these disorders are eligible for special education services and can be identified or placed under one of the categories of special education such as – learning disabilities, - behavioural and emotional disorders and – other health impairments.

2.2 Types of Attention Deficit Hyperactivity Disorder

Three types of Attention Deficit Hyperactivity Disorder have been identified by the American Psychiatric Association (1994), under the *Diagnostic and Statistical Manual of mental Disorders,* these are:

- Type A, Primary inattentive; (ADHD–IA). Children with this type have primary problems with attention.

- Type B, Primary Hyperactivity and Impulsive; (ADHD – HI). Individuals with this type display hyperactivity and impulsivity behaviour but do not manifest problem with attention.
- Type C, Combination of ADHD–IA and ADHD–HI (ADHDC). Individuals with this type have both attention problems and display hyperactivity and impulsivity behaviours.

National Institute of Mental Health (2008) and American Psychiatric Association (2006) again documented that a child with ADHD inattentive Type A has most or all of following symptoms, excluding situations where these symptoms are better explained by another psychiatric or medical condition:

- be easily distracted, miss details, forget things, and frequently switch from one activity to another,
- have difficulty maintaining focus on one task,
- become bored with a task after only a few minutes, unless doing something they find enjoyable,
- have difficulty focusing attention on organizing or completing a task,
- have trouble completing or turning in homework assignments, often losing things (e.g., pencils, toys, assignments) needed to complete tasks or activities,
- appear not to be listening when spoken to,
- daydream, become easily confused, and move slowly,
- have difficulty processing information as quickly and accurately as others,
- struggle to follow instructions,
- have trouble understanding details; overlooks details.

National Institute of Mental Health (2008) and American Psychiatric Association (2013) documented that a child with ADHD hyperactive-impulsive Type B has most or all of the following symptoms, excluding situations where these symptoms are better explained by another psychiatric or medical condition:

- fidget or squirm a great deal,
- talk nonstop. dash around, touching or playing with anything and everything in sight,
- have trouble sitting still during dinner, school, doing homework, and story time,
- be constantly in motion and impatient,
- have difficulty performing quiet tasks or activities,
- blurt out inappropriate comments, show their emotions without restraint, and act without regard for consequences,
- have difficulty waiting for things they want or waiting their turn in games,
- often interrupt conversations or others' activities.

2.3 Behavioural Pattern of Children with ADHD

Children often exhibit different behavioral pattern ranging from mild to profound type. Some may often break rules or misbehave which qualify them for a diagnoses of "disruptive behavioural disorder" characterized by deficits in self-control and involve

behavior tendencies like hyperactivity, inattention, aggressiveness, destructiveness and defiance of authority (American Psychiatric Association (APA), 2013). The symptoms tend to emerge in the preschool and elementary school years, sometimes a child might just be experiencing temporally behavioural or emotional problem. Many of these pass with time, and require parents, teachers, friends, family and society to be patient and understanding especially if the child presents a disability which he or she is psychologically adjusting to. In some cases, outside counselling is warranted and may be effective in helping children cope with stressors effectively. A professional could help the child learn how to control anger, how to work through emotions and how to communicate their needs effectively. Ubani and Osuagwu (2019) posited that untreated ADHD or misdiagnosed ADHD can make a child receive an inaccurate and usually negative label hearing impairment or Hard of Hearing whereas the actual problem goes untreated for a long time. These children may sometimes be labelled as stupid, crazy or with different disruptive behavioural problems which may have resulted to their maladjustment in schools and can lead to many secondary self- esteem issues if conselling for these special needs children is not done on time. Lerner (2003) classified attention deficit hyperactive disorder as a disruptive behaviour, deficit disorder conduct disorder and anti-social. According to American Academy of Child-Adolescent Psychiatry (AACAP, 2009); the following symptoms may be present in ADHD:

- the disorder must appear before the age 7.
- it must continue for at least six months.
- the symptoms must also create a real disability in at least two of the following area of the child's life:
    - in the classroom,
    - at home,
    - on the playground,
    - in the community, and/or
    - social settings.

William (2010) observed that most common symptoms of ADHD include, distractibility, poor concentration and focus, short term memory, spillage, procrastination, difficulties in organizing ideas and belongings. From the ongoing it has been observed that symptoms of ADD/ ADHD change at different stages of life, young children, elementary age children, adolescents and adults tend to exhibit different sets of behaviours. Older hyperactive children may be extremely restless and fidgety. They are likely to talk too much in class and may constantly fight with friends, siblings and classmates (Agomoh & Kanu, 2015). In adolescents, hyperactivity may no longer present itself but may diminish but other symptoms may appear such as behaviour problems in form of low self-esteem, inattentiveness or even depression (Zeigler, 2013). An environment filled with barriers will create a significant difference in experience for a large number of persons with disabilities. Conversely, an inclusive environment will offer the minimum level of intrusion for the experiences of all but enable persons with special needs to live their lives equally.

2.4 ADHD and Gender

ADHD is diagnosed approximately three times more often in boys than girls, although the disorder is often overlooked in girls due to their symptoms from those of boys Singh (2008). Thus about 20-50% of people diagnosed in childhood continue to have symptoms into adulthood and between 2-5% of adults have the condition (NCCMH, 2008). ADHD is more common in males than females. However, in adolescents and adults ADHD manifest in many forms, in children ADHD is increasingly being diagnosed in teenagers and adults (Faraone, Biederman & Mick, 1997; Wender, 1995). Many adult cases are former ADHD children who have grown up and continue to show signs of an attention disorder. However increasing numbers of ADHD diagnoses are being made in adults who were not diagnosed as children.

2.5 Factors Responsible for Attention Deficit Hyperactivity Disorder (ADHD)

ADHD is the most commonly diagnosed behavioural problem which affects five to twelve percent of all children. Most recently, the center for diseases and control has described it as a common childhood neuro-development condition with reported prevalence rate of 10% which reflects an increase over the past few years (CDC, 2017). The following group of factors has been speculated in literatures to also be responsible for ADHD such as

- hereditary and neurological factors;
- maternal health, birth injury or oxygen deprivation at birth;
- brain injury or head trauma;
- medications and medical illnesses;
- socio-economic/environmental factors.

Nigg and Breslau, (2007) noted that Chronic exposure to smoking in pregnancy causes behavioural and learning problems in children, studies where an evidence of a dose-response relationship between the numbers of cigarettes smoked and ADHD severity has been confirmed by. Smoking in pregnancy is known to result in lower birth weight. Also exposure to carbon monoxide or altered placental function could account for development of ADHDExcessive alcohol or drugs used by mother while the child is in the uterus can cause a number of problems, and ADHD is one of them. In addition to this problem, there are also other learning and behavioural disorders which can compound the ADHD problem (Osuagwu, 2019)

2.6 Strategies employed to curb ADHD

ADHD, its diagnosis and treatment have been controversial since the 1970s. These controversies involved clinicians, teachers, policy makers, parents and the media. Their positions ranged from the view that ADHD is within the normal range of behaviour to the hypothesis that ADHD is a genetic condition (Mayes, Bagwell, Erkulwater, 2008). Other areas of controversy include the use of stimulant medications in children, the method of diagnosis and the probability of over diagnosis (Cormier, Eileen October, 2008). In 2009, the National Institute for Health and care excellence, while acknowledging

the controversy, states that the amount treatments and methods of diagnosis are based on the dominant view of the academic literature (Schwartz, 2013). Grant Martin in his book 'Hyperactive Child' 1997 remarked that ADHD is managed not cured. Treating ADHD will not make it go away but it can improve a child's chances for avoiding many of the long-term problems associated with ADHD. Treatment of ADHD does not consist only in connecting a problem within the child; although the child is the focal point, self-management and self-control are crucial objectives for the child with ADHD, as such family members and teachers must also be willing to look at how their actions impact child's difficulties with impulsivity and inattention by modifying their behaviour in line with the child and altering his environment positively to obtain a better fit. Because each ADHD child requires a different plan treatment that must be multidimensional and multifaceted and an evaluation should be comprehensive. The management of this disorder involves a combination of methods. This includes special education services, behaviour modification, medication management, family counselling and teachers training (Lerner, 1995) many authorities also recommended the use of cubicles in the classroom to reduce extraneous or environment distractions. Cognitive training is also recommended for dealing with ADHD (Agomoh, 2012). However, Grinckslank et al (1961) suggested some approaches for managing children with ADHD these are:

- structure and stimulus reduction,
- behaviour modification,
- cognitive training, and
- medication.

Greenwill (1998) also commented that tranquilizers, anti-depressants, even anti-histamines have been prescribed for ADHD while recently some cases are treated with stimulant drugs. However, the most commonly used drugs are methylphenidate (Ritatin) pemoline (Cylert), dexthroamphetamine (Dexederine and a mixture of several amphetamines (Swartz, 2000).

The study is linked to Sir Francis Galton's nature and nurture theory of (1822 – 1911). The science of nature and nurture was first developed by Francis Galton a cousin of Charles Darwin in 1895 and it suggest that heredity and environment exposures contribute more to behavioral traits like criminality and intelligence. Human behavioural development is thought to be affected by both people's natural deposition and the environment in which they are raised. Also, a person's gene or personal life affects the behaviour. Nature is influenced by genetic inheritance and other biological conditions while nurture is the influence of external factors after conception. The theory in this modern time discuss the influence of heredity and environment on advancement of persons and their adjustment to the society. ADHD is a natural neurological disorder in which its manifest is influenced by age, sex, psychological makeup, as well as social and cultural factors. Similarly, Grant (1997) summarized the causes of ADHD to be hereditary, neurological factor, genetic brain injury, birth injury, drugs and alcohol in the parental environment to correspond with Francis Galton nature theory.

2.7 The Nature and Nurture Theory as Genetic and Environmental Influences of ADHD

The alliterative expression "nature and nurture" in English has been in use since at least the Elizabethan period and goes back to the medieval French as two concepts complimentary to the ancient Greek which attends to the fact that human behavior is determined by the environment either prenatal or during a person's life or by a person's gene. Nature is thought of as pre-wiring factor influenced by genetic inheritance and other biological conditions while nurture is generally taken to mean the influence of external factors after conception example; the product of exposure, experience and learning on an individual (Galton (1895) in Moore, 2015). It is the interaction of both cultural and social influences which are hereditary and environmental that explains the clinical picture that is seen (Larry, 1992). Obi (2019) noted that the social environment principally affects from the persons with disabilities as it involves the emancipation of these persons from the social oppression of discrimination and expulsion experienced in the society and then, the possibility of lead poisoning, food additives, food intolerances, refined sugar, medical illnesses, medications, oxygen deprivation at birth, and others not specified to correspond with Sir Francis Galton nurture theory.

At present, there is no generally accepted biochemical or neurological cause of ADHD. The view that humans acquire all or almost all their behavioural traits from "**nurture"** is termed a "**blank -slate view**" in human developmental psychology propounded by John Locke 1690, which assumes that human behavioural traits develop almost exclusively from environmental influences (Locke (1690) in Steven, 2002). The "blank-slatism" therefore as a denial on the influence of heredity which is a basic idea of the proponents of the nature theory. The nature and nurture conflicting approaches to human development thus influences one another constantly. Ecologist and behavioural genetics researchers think nurture as an essential influence on nature similarly in other fields the dividing link between and inherited and an acquired trait becomes unclear as in fetal development in the case with ADHD (Lester & Brandon, 2006). The blank-slatism as an ideological nurture dogma is linked to two other dominant basic assumptions:

- the sense that people are born good and corrupted by bad influence;
- the sense that there is a human soul capable of moral choices completely detached from biology. (Locke, 1890)

Lerner, (2003) posited that there is evidence that the problem runs in families; among monozygotic twins, when one twin is diagnosed with ADHD, the other is more is more likely to receive the same diagnoses than among dizygotic twins. Although this data suggests that inheritance contribute to ADHD, even for identical twins the concordance rate is less than one. In other words, genetics produces a disposition to ADHD, but environmental factors also play a role. Another condition that permits the disassociation of genes and environment is parental adoption of children which is evident in the research on twins separated at birth and introduced to different environmental conditions (Moore, 2015). Genes make substantial contribution including psychological traits such as intelligences and personality yet heritability may differ in other

circumstances for instance environmental deprivation. Since the definition of nature in this context is tied to heritability the definition of nurture necessarily become very wide including any type of causality that is not heritable moving nurture away from its original connotation of cultural influences to include all effects of the environment as evident in the behavioural studies of persons with ADHD. Sadly, little research has been conducted to identify these environmental factors even though their identification could lead to prevention programs. Most of the research effort has gone into treatment, specifically, the use of stimulant drugs to control the symptoms of ADHD (Swartz, 2013). A related study was taken by Grant 1997 on the essential classroom needs of an ADHD child. In which specification were made on how to equip the classroom. Students have been carried out in other means, but it appears no study on ADHD has been carried out in this local government and that is the gap to be filled.

3. Research Method

The research design for this study was the descriptive survey design. The population of the study was made up of 13 senior secondary schools in Ikwerre Local Government Area of Rivers State with a population of 13,500 students as a reflection of the number of parents and about 450 teachers. Out of the 13 public secondary schools listed by the zonal board; Taro Yamane's formula for sample size was substituted with the 13,950 population to get approximately 400 sample size. Parents of two hundred (200) students of adolescent ages (male and female) and two hundred (200) teachers were therefore sampled using stratified random sampling technique for teachers and probability sampling method for parents due to some of them are illiterate. Out of 400 respondents, 214 made up of male and 170 female this make up 384 respondents while the other 16 had their questionnaire mutilated. The instrument for data collection was a modified questionnaire adapted from SNAP IV ADHD rating scale and DBDRS (Disruptive Behavioural Disorder Rating Scale) developed by Swansen, Nolan and Pelhum (2017) titled "Characteristics Behaviour and Factors Responsible for Attention Deficit Hyperactivity Disorder Questionnaire (CBFRADHDQ) Among Secondary School Students in Ikwerre L.G.A. The section A of the questionnaire consists of information on personal data of the respondents while section B elicits information on the factors responsible for ADHD among secondary school students in Ikwerre L.G.A of Rivers State. All test questions make use of four-point Likert scale type of response mode ranging from Strongly Agree (SA = 4), Agree (A = 3), Disagree (D = 2) and Strongly Disagree (SD = 1). Respondents were expected to carefully read the statement by placing a tick on one of the four response alternatives. The face and content validity of the instrument were ensured using experts in measurement and evaluation. The reliability of the FADHDQ was determined by the use of test-retest procedure, pilot tested using 20 teachers and 20 parents randomly sampled from outside the area of the study. An interval of one week was allowed between the two test administered. The scores of the subjects on the two tests were obtained and subjected to Pearson Product Moment Correlation

Coefficient and a score of 0.70 was obtained which was considered high enough to justify the use of the instrument for the study. Mean and standard deviation were used to analyze the research questions. T-test was used to test the hypotheses at 0.05 level of significance. Rank order was employed in discussion of findings to give hierarchy of items.

4. Results

Research Question One: What are the factors responsible for ADHD among secondary school students in Ikwerre Local Government Area of Rivers State?

Table 1, entitled Mean and Standard Deviation of Factors Responsible for ADHD, also shows that out of 15 items used to test the factors responsible for ADHD among secondary school students in Ikwerre L.G.A; eight of the items 2, 3, 4, 5, 11, 12, 13, & 14 had mean scores of 3.00 and above each which was strongly accepted to be above criterion mean of 2.50 while four of the items 6, 9, 10 & 15 had mean scores of 2.00 and above the criterion mean and are also accepted as the factors responsible for ADHD among secondary school students in Ikwerre Local Government Area of Rivers State. However, three of the items number 1, 7 & 3 could not pass the criterion test of 2.50 and was therefore rejected as factors responsible for ADHD among secondary school students in Ikwerre L.G.A. These rejected test items were illnesses and medications are often noticed in them, diseases like epilepsy and seizures affects them, brain injury or head trauma are major role players in the disorder respectively. Therefore the grand mean score of 2.94 showed that the factors responsible for ADHD among secondary school students in Ikwerre L.G.A include: environmental factors, hereditary and genetic bases, parental frustrations, premature birth of forceps delivery, fatal exposure to toxic substances, neurological factors and poor parenting style, maternal health and high intake of sugar.

Table 1: Mean and Standard Deviation of Factors Responsible for ADHD

S/N	The following describes the factors responsible for ADHD among secondary school students in Ikwerre L.G.A	SA	A	D	SD	CR	N	Mean $\bar{X}$	SD $\bar{X}$	Rank Order	Decision
1	Illnesses and medications are often noticed in them	85	106	104	89	955	384	2.48	0.79	13th	**Disagreed**
2	They are easily influenced by peer group	213	102	50	19	1296	384	3.38	0.92	3rd	**Strongly Agreed**
3	They react to parental frustrations and negative reactions	160	149	35	40	1177	384	3.07	0.88	7th	**Strongly Agreed**
4	They are influenced by environmental factors like drugs and alcohol	138	197	28	21	1199	384	3.12	0.99	5th	**Strongly Agreed**

5	Lack of conducive learning environment frustrates them	238	84	50	12	1316	384	3.43	0.93	1st	**Strongly Agreed**
6	Hereditary and genetic bases are contributory factors to ADHD	122	168	60	34	1146	384	2.98	0.86	9th	**Agree**
7	Diseases like epilepsy and seizures affects them	68	102	160	54	952	384	2.47	0.79	14th	**Disagreed**
8	Brain injury or head trauma are major role players in the disorder	190	110	40	44	914	384	2.38	0.77	15th	**Disagreed**
9	Premature birth or forceps delivery contributes to the disorder	108	175	66	35	974	384	2.53	0.79	12th	**Agreed**
10	High intake of sugar and glucose influences them	114	132	88	50	1074	384	2.80	0.70	10th	**Agreed**
11	Fatal exposure to toxic substances may also be responsible for ADHD	104	201	62	17	1160	384	3.02	0.87	8th	**Strongly Agreed**
12	Excessive alcohol intake leads to ADHD	128	204	28	24	1204	384	3.13	0.88	4th	**Strongly Agreed**
13	Oxygen deprivation at birth, maternal health may be the responsible for ADHD	135	177	40	32	1183	384	3.08	0.87	6th	**Strongly Agreed**
14	Neurological factors are common causes associated with ADHD	206	137	36	5	1312	384	3.42	0.93	2nd	**Strongly Agreed**
15	Poor parenting, problems in family life is responsible for ADHD	122	104	100	58	1058	384	2.75	0.83	11th	**Agreed**
	Aggregate Mean = 47.94										
	Grand Mean = 2.94										

Research Question Two: What are the abnormal behavioural patterns of secondary school students living with ADHD in the local government area under study?

Table 2: Mean and Standard Deviation of Abnormal Behavioural Patterns of Students living with ADHD

S/N	**The following are abnormal behavioural pattern of secondary school students living with ADHD**	SA	A	D	SD	CR	N	Mean $\bar{X}$	SD $\bar{X}$	Rank Order	Decision
1	They have difficulty sitting still, playing quietly or relaxing	100	204	60	20	1044	384	2.72	0.82	15th	**Agree**
2	They frequently lose or misplace homework, books, or other items	167	182	20	15	1269	384	3.30	0.91	5th	**Strongly Disagree**
3	They move around constantly, often run or climb inappropriately	163	109	90	22	1181	384	3.08	0.88	12th	**Strongly Disagree**

4	They talk excessively and do not seem to listen when spoken to directly	173	140	65	6	1248	384	3.25	0.90	7th	**Strongly Disagree**
5	They have trouble staying organized, planning ahead and finishing projects	130	201	40	13	1216	384	3.17	0.89	9th	**Strongly Disagree**
6	They have a quick temper or short fuse	189	177	11	7	1316	384	3.43	0.93	3rd	**Strongly Disagree**
7	They constantly fidget and squirm	154	103	81	46	1133	384	2.95	0.86	4th	**Agree**
8	They are often emotional when responding to stress	131	164	54	35	1159	384	3.02	0.87	13th	**Strongly Disagree**
9	They are inattentive, the quiet dreamer who sometime sit at desk and stare into space	241	104	25	14	1340	384	3.49	0.83	1st	**Strongly Disagree**
10	They are inattentive, hyperactive and impulsive	123	196	52	13	1197	384	3.12	0.88	10th	**Strongly Disagree**
11	They often blurt out answers before questions have been completed	173	144	40	27	1231	384	3.21	0.89	8th	**Strongly Disagree**
12	They act impulsively without thinking and intrude on other peoples conversations or games	221	84	40	39	1255	384	3.27	0.91	6th	**Strongly Disagree**
13	They have trouble staying focused, easily distracted or get bored with a task before it is completed	197	152	20	15	1299	384	3.38	0.92	4th	**Strongly Disagree**
14	They often interrupt other, say the wrong thing at the wrong time	159	142	52	31	1197	384	3.12	0.88	10th	**Strongly Disagree**
15	They don't have the ability to keep powerful emotions in check resulting in angry outburst or temper tantrums	184	185	12	3	1318	384	3.43	0.93	2nd	**Strongly Disagree**
	Aggregate Mean = 47.94										
	Grand Mean = 3.20										

Table 2, entitled Mean and Standard Deviation of Abnormal Behavioural Patterns of Students living with ADHD, shows that out of the 15 items used to test the abnormal behavioural pattern of the students, 13 of the items had mean score of 3.00 and above each which was strongly accepted to be above criterion mean of 2.50 while only two items had criterion mean of 2.72 and 2.94 respectively for "they have difficulty sitting still, playing quietly or relaxing and they constantly fidget and squirm" respective and are therefore also accepted as the abnormal behavioural pattern of secondary school students living with ADHD in Ikwerre Local Government Area of Rivers State.

Therefore the grand mean score of 3.20 showed that the abnormal behavioural pattern of secondary school students living with ADHD in Ikwerre L.G.A include: hyperactivity, talking excessively, impulsivity, trouble staying organized or planning ahead, having quick temper, inattentive and inability to put powerful emotions in check resulting in temper tantrum.

Research Question Three: What are the strategies employed to curb ADHD among senior secondary school students in Ikwerre Local Government Area of Rivers State?

Table 3 titled Mean and Standard Deviation of Strategies Employed in Schools to curb ADHD focused on the strategies employed to curb attention deficit hyperactivity disorder. It also shows that out of the 15 items used to test the strategies employed to curb ADHD among senior secondary school students in Ikwerre L.G.A, three 2, 6 & 9 of the items had mean score of above 3.00 which was strongly accepted to be above criterion mean of 2.50 while only six items 3, 4, 5, 7, 8 & 10 had criterion mean a little above from the table mean and are therefore also accepted as the strategies employed to curb ADHD among secondary school students in Ikwerre Local Government Area of Rivers State. But one test item strongly disagreed with the decision rule by mean and standard deviation (SD) of 1.84 and 6.78 against the accepted criterion mean of 2.50. This rejected item was the introduction of special needs educator in the school as strategy to curb ADHD among secondary school students.

Therefore the grand mean score of 2.78 showed that the strategies employed to curb ADHD among secondary school students in Ikwerre L.G.A include: use of disciplinary measures in the school, introduction of behaviour modification therapist in the school, structure and stimulus reduction in class, cognitive training, family counselling and teachers training, medications, removal of food additives/control of blood sugar, psychotherapy.

Table 3: Mean and Standard Deviation of Strategies Employed in Schools to curb ADHD

S/N	**The following are strategies employed to curb attention deficit hyperactivity disorder among secondary school students**			**SA**	**A**	**D**	**SD**	**CR**	**N**	**Mean $\overline{X}$**	**SD $\overline{X}$**	**Rank Order**	**Decision**
1	The introduction of a special needs educator in the school to monitor students with ADHD			12	101	83	188	705	384	1.84	6.78	10th	**Strongly Disagree**
2	Use of disciplinary measures in the school			125	188	58	13	1193	384	3.11	0.88	2nd	**Strongly Disagree**
3	Introduction of behaviour modification therapists in the school			101	128	86	69	1029	384	2.68	0.82	7th	**Agreed**
4	Structure and stimulus reduction in the classes			94	156	100	34	1079	384	2.81	0.83	5th	**Agreed**
5	Cognitive training of the students by the teachers			107	128	80	69	1041	384	2.71	0.82	6th	**Agreed**

6	Family counselling and teachers training			87	202	65	30	1114	384	3.20	0.89	4th	**Strongly Disagree**
7	Medications like antidepressants, tranquilizers and anti-histamines have been prescribed in use for students with this ADHD			43	191	104	46	999	384	2.60	0.81	8th	**Agreed**
8	Removal of food addictive/control of blood sugar level			102	198	57	27	1143	384	2.98	0.87	3rd	**Agreed**
9	Psychotherapy (counselling) of students			133	176	70	25	1225	384	3.19	0.89	1st	**Strongly Disagree**
10	Social skills training in school have been used to manage students with ADHD			88	109	107	80	973	384	2.53	0.79	9th	**Agreed**
	Aggregate Mean = 27.65												
	Grand Mean = 2.78												

Hypotheses One: There is no significant difference in the factors responsible for ADHD between school location (rural and urban) in Ikwerre Local Government Area.

Table 4, entitled t-test analysis of factors responsible for attention deficit hyperactivity disorder (ADHD) based on school location, shows the difference between the mean score rating of factors responsible for attention deficit hyperactivity disorder (ADHD) based on school location among students in urban schools and students in rural schools of Ikwerre L.G.A of Rivers State. The table shows that the mean difference in the responses of students based on school location gave t-cal value of 2.48 and df of 382. Since the t-cal is greater than t-crit; it implies that there is a significant difference in the factors responsible for ADHD based on school location. Hypothesis 1 (HO_1) is therefore rejected.

Table 4: t-test analysis of factors responsible for attention deficit hyperactivity disorder (ADHD) based on school location

	School Location	**N**	**Mean**	**SD**	**df**	**t-cal**	**t-crit**	**Decision**
Factors responsible for ADHD	Urban	192	3.24	0.96	382	2.48	196	Significant
	Rural	192	3.48	0.93				

N = Number, SD = Standard Deviation, df = degree of freedom, t-cal = t-test calculated value, t-crit = t-test critical value.

Hypothesis Two: There is no significant difference in the factors responsible for ADHD based on gender (male and female) in Ikwerre Local Government Area.

Table 5: t-test analysis of factors responsible for attention deficit hyperactivity disorder (ADHD) based on gender

	Gender	N	Mean	SD	Df	t-cal	t-crit	Decision
Factors responsible for ADHD	Male	184	3.04	0.96	382	0.142	196	Not Significant
	Female	200	3.09	1.21				

N = Number, SD = Standard Deviation, df = degree of freedom, t-cal = t-test calculated value, t-crit = t-test critical value.

Table 5, entitled t-test analysis of factors responsible for attention deficit hyperactivity disorder (ADHD) based on gender, shows the difference between the mean score rating of factors responsible for attention deficit hyperactivity disorder (ADHD) based on gender, among male students and female students in Ikwerre L.G.A of Rivers State. The table shows that the mean difference in the responses of the students based on gender gave a t-cal value of 0.142 and df of 382. Since the t-cal is lesser than t-crit; it implies that there is no significant difference in the factors responsible for ADHD based on gender. Hypothesis 2 (HO_2) is therefore accepted and retained.

5. Discussion of Findings

5.1 Factors Responsible for ADHD

Research question one considered the factors responsible for ADHD among secondary school students in Ikwerre L.G.A, the result shown using rank order from 1st to 15th test items proved a high extent that lack of conducive learning environment, neurological factors, peer group pressure, hereditary and genetics basis, parental frustrations, premature birth, high intake of sugar and poor parenting problems may have been the underlying factors responsible for ADHD, diseases like epilepsy being the cause, brain injury or head trauma ranked lowest as the factors responsible. This result may not be unconnected to the fact that some excessive alcohol or drugs used by a mother while the child is in the uterus can cause a number of problems and ADHD is one of them just like other sources suggests that it runs in the family as cited in Agomoh and Kanu (2005). Swartz (2000) studies on ADHD also show that prevalence of ADHD increases with hypoxia and prematurity. In that same line, Agomoh and Kanu (2015) cited that brain dysfunction or malfunctioning of the front lobes of the brain may be a contributory factor to ADHD. In agreement, Cortese & Castellanos (2012) stated that neuroimaging techniques suggest there are differences between individuals with and without ADHD in the brain, such as thinner regions of the cortex.

5.2 Abnormal Behavioural Pattern of Secondary School Students

The research question two determined the behavioural pattern of secondary school students living with ADHD in Ikwerre L.G.A. The result revealed that some responses of the respondents were very high in general acceptance of abnormal behavioural pattern using rank order from 1st to 15th test items, inattentive, inability to keep powerful emotions in check resulting in angry outburst or temper tantrums, quick temper fuse,

difficulty staying still, playing quietly or relaxing, talking excessively, impulsivity, hyperactivity. The result may not be unconnected to the fact that some of the respondents are already living with this disorder in a mild or moderate form especially those who have very often been associated with Disruptive Behavioural Disorder (DBD) or those who often faced disciplinary problems in school. This result is in agreement with that of Lerner (2003) who agreed that older hyperactive children may be extremely restless and fidgety, they are like to talk too much in class and may constantly fight with friends, siblings and classmates. However, by adolescents, hyperactivity may no longer present itself. Although the hyperactivity may diminish, other symptoms may appear such as behaviour problems, low self-esteem, inattentiveness or even depression. it also agrees with Ambuabunos (2011) and Zeigler (2013) who opined that ADHD may make children to be restless with low frustration tolerance by blowing up and saying things they don't mean and cannot be easily motivated by consequences or punishment, as such they may be more difficult to discipline and may repeat misbehaviour.

5.3 Strategies Employed to Curb Attention Deficit Hyperactivity Disorder (ADHD) in Senior Secondary Schools in Ikwerre L.G.A

The strategies employed to curb ADHD in secondary schools in Ikwerre L.G.A was investigated. The result showed that there has been no introduction of special needs education teachers to the public secondary schools, as such the management of the disorder has been through guess work by the regular school teachers. In rank order from the 1st to the 10th hierarchy; the findings agreed with psychotherapy counselling of students the use of disciplinary measures, removal of food additives, family counselling and teachers training, cognitive and stimulus reduction, cognitive training of teachers and students, behaviour modification therapy, medications and social skill training. This finding was in order with the research made by Lerner (1995) where it was stated that the management of this disorder involves a combination of method. This includes special education services, behaviour modification, medication management, family counselling and teachers' training. Agomoh (2012) again agreed with this finding that many authorities also recommended the use of cubicles in the classroom to reduce extraneous or environmental distractions, cognitive training was also recommended for dealing with ADHD.

In hypothesis one the study focused on the significant difference in factors responsible for ADHD based on school location. The responses showed there is a significant difference in the factors responsible for ADHD based on rural and urban locations which supports the result that nurturing modern homes and environment with clear and consistent structure is crucial to the treatment of ADHD children. For school location, the studies revealed that student from rural settlements are to a large extent more vulnerable to having ADHD than students from urban settlements. This may not be unconnected to the fact that most students in urban locations are more exposed to the existence of this disorder, may have been diagnosed earlier in life and therefore been able to manage the condition much better than those in rural locations. Lerner (2012) in

agreement state that regarding socioeconomic inequities, public health insurance coverage seem to be associated with a higher prevalence of developmental disabilities; low family income and low maternal education have similar but less significant impacts.

In hypothesis two, the study focused on the significant difference in factors responsible for ADHD based on gender. The responses showed there is no significant difference in the factors responsible for ADHD based on gender which supports the result by Ambuabunos (2011) who recorded prevalence decline of females to males 5.8% at 6 years and rise to peak of 12.6% among those 10 years of age of ADHD. For gender, there was strong agreement in the findings which reveal the fact that ADHD is more common in male students than in female students which might not be unconnected to the fact that the symptoms are often overlooked in girls than in boys due to their differing symptoms which was in line with Lerner (2012) who agreed in her studies that ADHD is more common in males than in females, the females with ADHD are more likely to have problem primarily with inattention. The studies also tallied with Ambuabunos (2011) who recorded prevalence decline of females to males 5.8% at 6 years and rise to peak of 12.6% among those 10 years of age.

6. Conclusion

The study is on Characteristics behaviours and factors responsible for Attention Deficit Hyperactivity Disorder (ADHD) among senior secondary school students in Ikwerre L.G.A of Rivers State. From the findings it can be concluded that the entire senior secondary schools in Ikwerre L.G.A have cases of students living with ADHD which reflect remarkably in their disruptive behavioural disorder (DBD) attitude. Some of the factors responsible for this disorder amongst these students are traced to nature and nurture for genetics and environmental influence respectively. Gender, and school location are major influences on this disorder. The study found that the factors responsible for ADHD among students in Ikwerre L.G.A of Rivers State ranged from biological factors to environmental factors which corresponds with the nature and nurture principles yet this disorder which is greatly responsible for the learning difficulties, mass academic failure and disruptive behavioural tendencies is not given much attention and greater awareness for implementation of Special Needs Education in the State in an Inclusive setting. The senior secondary schools do not have special needs education department nor counselling labs, neither do they engage the services of special needs professionals instead they engage the services of older regular teachers in the school in forming disciplinary committees who will handle cases of disruptive behaviours like ADHD using punitive measures which actually escalate the cases and offer more harm than good. ADHD is as prevalent in Nigeria as it is in other parts of the world with more males involved but the symptoms and characteristics changes with age and gender. Although there is no proven way to prevent ADHD; early identification, involvement of special needs educator, psychotherapy, counselling of parents and training of teachers can prevent many of the crises associated with the disorder. As a

result, teaching methods for students with ADHD used by special education teachers and general education teachers must include managing impulsivity, reducing hyperactivity and stimulus reduction strategy to increase attention.

6.1 Recommendations

Based on the findings of the research work, the following recommendations were made:

1) Efforts should be made at creating public awareness for ADHD amongst teachers and parents.
2) Increased attention should be paid to the identification and management of such children seen in public schools with the hope of redirecting their social and academic lives.
3) School health programs should be conducted from time to time to offer veritable avenue for the identification of such children.
4) The Rivers State Government and the Senior Secondary Schools Board (SSSB) Ikwerre L.G.A should work in synergy in training and retraining of staff on ways of handling the disorder in an inclusive school setting.
5) Non-governmental agencies and private agencies should be involved in creating awareness and organizing programs where students can be trained as well.
6) Senior secondary schools in the rural part of Ikwerre L.G.A should be given more consideration and preference in the distribution of professionals like counsellors, psychologists and special needs educators because the findings show the rural places are more disadvantaged.
7) Children with these disorders are eligible for special education services as such the curriculum should be conducted using Individualized Educational Planning (IEP) to suit their special needs areas and also using structure and stimulus reduction approach.
8) The Government in collaboration with Ikwerre senior secondary board (SSSB) must ensure the employment and placement of qualified special education teachers and other qualified professionals like psychiatrists, psychologists, counsellors alongside general class room teachers to rural schools to handle special needs cases like ADHD

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