

## UNDERSTANDING DISABILITY CONCEPTS FOR EFFECTIVE MANAGEMENT OF CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)

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### **Abstract**

*ADHD has numerous symptoms although the three most identifiable symptoms are impulsivity, hyperactivity and inattention. Impulsivity (the tendency to act without consideration or judgment), hyperactivity (the tendency to fidget excessively and having a difficulty working quietly) and inattention such as having trouble sustaining and directing attention from class lessons, readings and conversation; having a difficulty completing homework and in class assignments. Children with ADHD may experience significant functional problems, such as academic underachievement, troublesome interpersonal relationship, and poor self-esteem. Teachers are concerned why children become restless and too playful when given a task. Many of these signs may be symptoms of ADHD. Unless a proper diagnosis is made, teachers may continue to manage the situation on their own without success. It is therefore, recommended that pupils who manifested the ADHD symptoms should not be punished or bullied by teachers and peers' rather behavioural interventions is required during teaching and learning process.*

**Key Words:** Attention Deficit, Hyperactivity, Impulsivity and Disorder

### **Introduction**

Childhood is an important life stage regarding the psychological basis of human development of which ADHD may also occur during this time. According to DSM-IV-TR, 2000 ADHD is one of the most common childhood behaviour disorders with recorded prevalence estimated rates of 5% of school-age children in the general population. The disorder is characterized by attention problem; motor restlessness and impulsive responding. Abiodun(2007) adjudged the prevalence of ADHD symptoms in Nigeria as 8.7 per cent of school-age children. While Darma (2010) reported the prevalence estimate of ADHD in the study area as 9 to 13 percent, in a classroom of 76-88 pupils, 7-11 were diagnosed as having ADHD.

Problems in school are a key feature of attention-deficit/hyperactivity disorder (ADHD), often bringing the child with ADHD to clinical attention. It is important to establish the

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nature, severity, and persistence of these school difficulties in children with ADHD. It is also critical to learn how various treatments affect academic and educational outcomes. These findings inform clinical practice, public health, public education, and public policy. This paper is organized around 5 questions: (1) What ADHD means? (2) What are the educational characteristics of ADHD children?(3) Are educational problems associated with ADHD transient or persistent? (4) How do the managements of ADHD affect educational outcomes? (5) What recommendations do we offer to improve the educational outcomes of children with ADHD?

## **Conceptual Framework**

### **Definitions of ADHD**

According to DSM-IV-TR, 2000 ADHD is one of the most common childhood behaviour disorders with recorded prevalence estimated rates of 5% of school-age children in the general population. The disorder is characterized by attention problem; motor restlessness and impulsive responding. Abiodun (2007) adjudged the prevalence of ADHD symptoms in Nigeria as 8.7 per cent of school-age children. While Darma (2010) reported the prevalence estimate of ADHD in the study area as 9 to 13 percent, in a classroom of 76-88 pupils, 7-11 were diagnosed as having ADHD.

ADHD has numerous symptoms, although the three most identifiable symptoms are impulsivity, hyperactivity and inattention. Impulsivity (the tendency to act without consideration or judgment), hyperactivity (the tendency to fidget excessively and having a difficulty working quietly) and inattention such as having trouble sustaining and directing attention from class lessons, readings and conversation; having a difficulty completing homework and in class assignments (Du Paul and Stoner, 2003).

Children with symptoms of inattentiveness often begin tasks before directions have been given, talk out of turn, do not show regard for social consequence, and take unnecessary risks. Difficulty maintaining sustained attention often occurs in situations demanding attention to boring, repetitive tasks (Milich, Loney & Landau, 1982). A child with ADHD frequently does not complete assigned work, daydreams, and has difficulty following directions. Hyperactivity can be displayed both motorically and verbally. These children are frequently described as always on the go, unable to sit still, fidgety, and talkative. Children with ADHD often display great variability in task performance.

On the other hand, impulsive children seem unable to curb their immediate reactions or think before they act. They will often blurt out inappropriate answers, display their emotions without restraint, and act without regard for the later consequences of their conduct. Their impulsivity may make it hard for them to wait for things they want or to take their turn in classroom activities and games. Impulsivity causes difficulty in any task requiring a delay: raising hands to answer questions, reading or listening to directions, asking questions to clarify information, planning, and organizing.

Cooper and Bilton (1996) viewed ADHD as a neurobehavioral, developmental disorder with associated cognitive difficulties, and is primarily characterised by the co-

existence of chronic inattentiveness and hyperactivity. It is considered to be the result of a neurological dysfunction which causes a deficiency in neuromotor transmitters in the brain cells. Genetics research also indicates that ADHD may be a result of abnormalities to the dopamine system, which is concerned with the regulation of movement (Hinshaw, 1992).

### **Educational Characteristics of ADHD Children**

Children with ADHD may experience significant functional problems, such as academic underachievement, troublesome interpersonal relationship, and poor self-esteem (Barkley, 1991). In addition, studies have reported as many as 56% of children with ADHD require tutoring, 30% repeat a grade, 30- 49% are placed in special education, 46% have a history that includes suspension from school and 10-35% drop out of school before finishing high school (Barkley, Fischer, Edelbrock & Smallish, 1990; Weiss & Hechtman, 1993). Given the numerous responsibilities assumed by teachers in regular education classrooms, having a student with ADHD symptoms can cause teachers anxiety, as they attempt to meet the needs of all their students. In this regard, teachers spend more time on classroom management; and less time on classroom instructions. Additionally, a substantial number of children diagnosed with ADHD experience difficulties in interpersonal relationships, such as peer rejection, due to their aggressive and boisterous interactions (Landau & Moore, 1991).

Children with ADHD show significant academic under achievement, poor academic performance, and educational problems. In terms of impairment of body functions, children with ADHD show significant decreases in estimated full-scale IQ compared with the normal children. They experienced interpersonal relationships, such as peer rejection, due to their aggressive and boisterous interactions (Hinshaw, 1992).

In terms of activity limitations, children with ADHD score significantly lower on reading and arithmetic achievement tests than normal children. In terms of restrictions in social participation, children with ADHD show increases in repeated grades, use of remedial academic services, and 30- 49% are placed in special education classes compared with normal children. 46% of ADHD children are more likely to be expelled, suspended, or repeat a grade compared with normal children. While 56% are more likely to use special educational services than children without ADHD. Additionally, children with ADHD use more ancillary services, including tutoring, remedial pullout classes, after-school programs, and special accommodations. Some studies have not found different outcomes in terms of academic attainment, use of special services, and rates of high school graduation (Barkley, Fischer, Edelbrock & Smallish, 1990; Weiss & Hechtman, 1993).

Cooper and Bilton (1996) stated that behavioural symptoms may appear to be innocent and merely annoying; however, 'if left untreated, the persistent and pervasive effects of ADHD can severely interfere with a person's ability to get the most out of education or the workplace. Secondary effects, such as poor motivation and low self-



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esteem, are at times inappropriately dealt with by professionals and families. The behavioural criteria for diagnosing ADHD fall into three categories – inattention, hyperactivity and impulsivity.

Train (2004) believed that ADHD is a highly debilitating condition, and misunderstanding of this can lead to negative personal and social outcomes for the person affected. The majority of professionals now accept that ADHD is a complex but genuine condition, which may cause a child to underachieve at school and display unpredictable challenging behaviours. It is not a result of bad parenting, and parents should be encouraged not to feel guilty.

Therefore, understanding this disability is critically important for effective management of ADHD thereby enhancing the academic performance and social development of young children who manifest ADHD characteristics

### **Are Educational Problems Transient or Persistent?**

A study by Biederman, Faroane & Milberger (1996) have shown that the academic under achievement and poor educational outcomes associated with ADHD are persistent. Academic difficulties for children with ADHD begin early in life. Symptoms are commonly reported in children aged 3 to 6 years, and preschool children with ADHD or symptoms of ADHD are more likely to be behind in basic academic readiness skills. Several longitudinal studies follow school-age children with ADHD into adolescence and young adulthood. Initial symptoms of hyperactivity, distractibility, impulsivity, and aggression tend to decrease in severity over time but remain present and increased in comparison to normal children.

Lambert (1998) have shown that adolescence with history of ADHD fail more grades, achieve lower ratings on all school subjects on their report cards, have lower class rankings, and perform more poorly on standardized academic achievement tests than normal adolescence. School histories indicate persistent problems in social participation, including more years to complete high school, lower rates of college attendance, and lower rates of college graduation for ADHD person than normal individuals. The subjects with ADHD in the longitudinal studies generally fall into 1 of 3 main groups as young adults:(1) approximately 25% eventually function comparably to matched normal controls; (2) the majority show continued functional impairment, limitations in learning and applying knowledge, and restricted social participation, particularly poor progress through school; and(3) less than 25% develop significant, severe problems, including psychiatric and/or antisocial disturbance. It is unclear what factors determine the long-term outcomes. Persistent difficulties may be due to ADHD per se or may be due to a combination of ADHD and coexisting conditions, including learning, internalizing, and disruptive behaviour disorders.

**How do Management Affect Educational Outcomes?**

Two types of interventions can be helpful: antecedent interventions, i.e., things done before the target behaviour occurs, and consequence-based interventions, i.e., things done after the behaviour happens. Both are designed to change the rate at which unwanted behaviour occurs. Antecedent interventions prevent problem behaviours before they occur, usually prompting some alternative or replacement behaviour in its place. Some antecedent based changes that have been shown to help youngsters with ADHD are: decreasing "down time," such as the time to pass out papers, increasing the pacing of tasks, frequently announcing and reiterating class rules and their consequences, doing more difficult academic, problem solving tasks in the morning, rather than in the afternoon. Individualized checklists to prompt specific desired target behaviours also are antecedent interventions.

Antecedent interventions can be conceptualized as the need to design, or structure, the environment to be ADHD-friendly. Strategies such as using closed spaces, decreasing visual and auditory intrusions, minimizing play materials that can distract, modifying the length of tasks, and using more frequent "checking in" with children during the times they are expected to work independently have been supported by research.

Antecedent interventions alone are not considered sufficient for reducing ADHD related problems, and are best paired with consequence-based strategies, such as a token economy, time-out, and punishment. Although controversies exist regarding time-out and punishment, it is believed that these strategies work best when parents participate actively.

**Behaviour Management Techniques**

Children with ADHD perform best with clear expectations and immediate feedback. They may need extra help from behaviour modification plans to meet classroom expectations such as completing work and restraining movement. Researches (DuPaul & Eckert, 1998; Bello, 2014, Zentall 1993) have shown the following types of behaviour modification to be effective for children with ADHD.

1. Positive reinforcement the place to start when developing plans ranges from frequent positive feedback (praise) to token reward systems, in which children can earn treats and privileges for specified behaviour.
2. Behavior reduction strategies negative feedback; short, immediate reprimands; and redirection effectively reduce undesirable behaviours and should be used along with positive reinforcement.
3. Response cost, which combines positive reinforcement (earning tokens that can be exchanged for privileges or rewards) and punishment (deducting tokens for undesirable behaviour), can increase on-task behaviour and work completion.

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4. Correspondence training rewards children for matching their words (intentions) to actions: they promise to complete a task, then do it; or do the task and then report it (DuPaul & Eckert, 1998).

### **Family-Based Interventions**

The inattentive, hyperactive, and impulsive behaviours that characterize ADHD often contribute to impairment in the parent–child relationship and increased stress among parents of children with the disorder (Johnston, 2002). Over time, parents may develop maladaptive and counterproductive parenting strategies to deal with these problems that may serve to maintain or exacerbate existing behavioural difficulties (Silver, 1992). It follows that one evidence-based component of comprehensive treatment for ADHD involves working directly with parents to modify their parenting behaviours in order to increase positive outcomes with their children (Pelham 1998). He further suggested that effective modifying poor parenting practices is of utmost importance, as poor parenting is one of the more robust predictors of negative long-term outcomes in children with behaviour problems. Behavioural parent training, then, is one of the most effective ways to change parenting and therefore treat ADHD (Pelham, 1998). Behavioural parent training has a long, successful history as a treatment for children with ADHD (Pelham, 1998), oppositional defiant disorder (ODD) and conduct disorder as well as many internalizing disorders (e.g., Silver, 1992). Behavioural parent training explicitly provides parents with instruction in the implementation of behaviour modification techniques that are based on social learning principles. Parents are taught to identify and manipulate the antecedents and consequences of child behaviour, target and monitor problematic behaviours, reward pro-social behaviour through praise, positive attention, and tangible rewards, and decrease unwanted behaviour through planned ignoring, time out, and other non-physical discipline techniques (e.g., removal of privileges). The efficacy of parent training in treating ADHD has been evaluated in at least 28 published studies. These studies employed manualized parent training interventions, included children between the ages of 3 and 14, were heterogeneous in design (e.g., randomized, controlled clinical trials, single subject case studies), and combined parent training with various treatment components (e.g., school interventions, social skills training). Overall, these studies suggested that parent training results in improvements for children with ADHD in several important areas, most notably parent ratings of problem behaviour and observed negative parent and child behaviours, with an average effect size of .87. In some cases, parent training has also resulted in improvements in other domains, such as parental reports of stress (e.g., DuPaul, & Eckert, 1998), and social behaviour and acceptance (Pelham, 1998).

### **Classroom Behaviour Management**

Behaviourally based classroom interventions constitute an empirically supported treatment for children with ADHD (Pelham, 1998). As with parent training, behavioural



classroom interventions generally involve regular consultation with the child's teacher regarding the use of behaviour modification strategies. Consultation usually begins with psycho-education about ADHD and identification of specific target behaviours, based upon a functional assessment of behaviour (i.e., examination of antecedents, behaviours, and consequences). Teachers are then instructed regarding the use of specific behavioural techniques, including praise, planned ignoring, effective commands, and time out, as well as the daily report card (DRC) and/or more extensive individualized or classroom-wide contingency management programs. The DRC is a school-based intervention in which specific behavioural goals are set and the child is rewarded at home based on the attainment of these goals (O'Leary, Vivian & Nisi, 1985). Behavioural goals are set at a level that is challenging, yet attainable, and are made increasingly more difficult until the child's behaviour is within developmentally normative levels based on the principle of shaping. The DRC also provides parents with daily feedback regarding their child's behaviour and performance at school, and allows them to provide back-up reinforcement for classroom behaviour. The number of DRC goals and frequency of feedback and reinforcement are based on the child's developmental level (Pelham, 1998). For example, young or very impulsive children may require fewer goals and more frequent feedback and reinforcement than older children or adolescents. Many researchers have reported beneficial effects of the DRC on observational measures and teacher ratings of classroom behaviour (Faraone, 2009).

### **Academic Interventions**

While behaviourally-based classroom interventions typically target task engagement and disruptive behaviour, academic interventions for ADHD focus primarily on manipulating antecedent conditions such as academic instruction or materials in order to improve both behavioural and academic outcomes (DuPaul & Eckert, 1998). For example, a group behavioural intervention to target homework problems in children with ADHD through the structuring of homework time, use of goal setting, and parent-teacher collaboration has been developed, and preliminary results suggest positive effects on homework accuracy and completion. Direct targeting of academic impairment is an important component of comprehensive treatment of children with ADHD due to the strong association between ADHD and academic underachievement (Barkley, 2006; Hinshaw, 1992), the high rate of co-occurring learning problems in this group (Silver, 1992), and the high rates of grade retention, expulsion, and school dropout in adolescents with the disorder (Barkley, Fisher, Edelbrock, & Smallish, 1990).

Academic approaches that have been developed and show some preliminary support for children with ADHD include task and instructional modifications, peer tutoring, computer-assisted instruction, and strategy training (DuPaul & Eckert, 1998). Task and instructional modifications involve implementing procedures such as reducing task length, dividing tasks into subunits and setting goals for the child to achieve in shorter time intervals, using increased stimulation of the task (e.g., color, texture or rate

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of stimulus presentation), and modifying the delivery of instruction depending on the student's individual learning style (DuPaul & Eckert, 1998; Zentall, 1993). Computer-assisted instruction entails the manipulation of the task format through presentation of specific instructional objectives, highlighting of essential material, use of multiple sensory modalities, dividing content material into smaller chunks of information, and providing immediate feedback about response accuracy (DuPaul & Eckert, 1998). The instructional approach of strategy training requires teaching students to use a set of procedures or strategies that specifically address the demands of an academic situation (e.g note-taking, study skills, homework completion, or self-reinforcement procedures) (DuPaul & Eckert, 1998). Finally, during peer tutoring, one student provides assistance, instruction and feedback to another, thereby simultaneously working on academic and social skill goals (DuPaul & Eckert, 1998).

### **Conclusions**

The evidence that ADHD is associated with poor academic and educational outcomes is overwhelming. However, studies thus far find that treatments are associated with relatively narrow improvements in core symptoms of inattention, hyperactivity, and impulsivity at the level of body functions and attending and completing tasks at the level of activities. We need prospective, controlled, and large-scale studies to investigate whether existing or new treatments will improve reading, writing, and mathematics skills; reduce grade retention; reduce expulsions and detentions; improve graduation rates; and increase completion of post secondary education. In a literate, information-age society, these improved outcomes are vital to the economic and personal well-being of individuals with ADHD.

We remain ill-informed about how to improve the educational outcomes of children with ADHD, despite decades of research on diagnosis, prevalence, and short-term treatment effects. It may be impossible to conduct long-term randomized, controlled trials with medication or behaviour management used as treatment modalities for practical and ethical reasons. However, large-scale studies that use modern statistical methods, such as hierarchical linear modelling, hold promise for teasing apart the impact of various treatments on outcomes. Such methods can take into account the number and types of interventions, duration of treatment, intensity of treatment, and adherence to protocols. Educational interventions for children with ADHD must be studied. Such studies must include multiple outcomes, with emphasis on academic skills, high school graduation, and successful completion of postsecondary education. Based on the above conclusions, it is therefore recommended that:

The children with ADHD manifestations should not be punished or bullied by teachers, parents and peers rather behavioural interventions are required.

School counsellors should utilize a number of techniques in their counselling relationship to cater for individual differences inherent in their clients who may manifest ADHD symptoms.

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Use of achievement tests is also recommended for ADHD children in addition to promotional/entrance examinations.

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