

## ATTENTION DEFICIT HYPERACTIVITY DISORDER AND ITS IMPACT ON LEARNING AMONG NIGERIAN PRIMARY SCHOOL STUDENTS

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### Abstract

*This paper explores the impact of Attention Deficit Hyperactivity Disorder (ADHD) on learning among Nigerian primary school students, focusing on the disorder's core components: inattention, hyperactivity, and impulsivity, how inattention difficulties hinder academic performance, hyperactivity influences classroom behaviour, and impulsivity affects social interactions and learning processes. It further discusses on the cognitive challenges associated with ADHD and their effects on educational outcomes. To address these challenges, the paper reviews various educational interventions tailored for students with ADHD. These interventions include behavioural strategies designed to modify disruptive behaviours and the integration of technology to enhance learning experiences. Practical suggestions are provided for managing ADHD symptoms, such as distractibility, impulsivity, and hyperactivity, to create a more supportive and effective learning environment.*

**Keywords:** Attention Deficit Hyperactivity Disorder, Learning, Primary School, Students

### Introduction

Attention-deficit/hyperactivity disorder (ADHD) is a common neurodevelopmental condition marked by developmentally inappropriate levels of inattention, and/or impulsivity and hyperactivity that often significantly impair functioning across multiple domains and place children at elevated risk for a variety of adverse outcomes (Sparrow & Erhardt, 2014). Inattentive ADHD entails executive deficits that involve off-task behaviors and poor organization, whereas hyperactivity is demonstrated by fidgeting, excessive talking, and the inability to regulate stimuli (Hamilton & Astramovich, 2016). This disorder could have a negative impact on the behavioral, social, academic, emotional, and cognitive development of an individual.(Briscoe-Smith & Hinshaw, 2006). Attention Deficit Hyperactivity Disorder is a neurodevelopmental disorder that globally affects 5% – 7.2% of youth and 2.5% – 6.7% of adults (Song, Zhang, Li & Rudan, 2011).

### Understanding Attention Deficit Hyperactivity Disorder (ADHD)

According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (2013), individuals with ADHD exhibit a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with their functioning or development, as follows:

- I. Inattention: Six or more symptoms of inattention for children up to age 16 years, or five or more for adolescents aged 17 years and older and adults; symptoms of inattention have been present for at least 6 months, and they are inappropriate for developmental level:
  - a) Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or with other activities.

- b) Often has trouble holding attention on tasks or play activities.
  - c) Often does not seem to listen when spoken to directly.
  - d) Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (e.g., loses focus, side-tracked).
  - e) Often has trouble organizing tasks and activities.
  - f) .Often avoids, dislikes, or is reluctant to do tasks that require mental effort over a long period of time (such as schoolwork or homework).
  - g) Often loses things necessary for tasks and activities (e.g. school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses, mobile telephones).
  - h) Is often easily distracted
  - i) Is often forgetful in daily activities.
- II. Hyperactivity and Impulsivity: Six or more symptoms of hyperactivity-impulsivity for children up to age 16 years, or five or more for adolescents age 17 years and older and adults; symptoms of hyperactivity-impulsivity have been present for at least 6 months to an extent that is disruptive and inappropriate for the person’s developmental level:
- a) Often fidgets with or taps hands or feet, or squirms in seat.
  - b) Often leaves seat in situations when remaining seated is expected.
  - c) Often runs about or climbs in situations where it is not appropriate (adolescents or adults may be limited to feeling restless).
  - d) Often unable to play or take part in leisure activities quietly.
  - e) Is often “on the go” acting as if “driven by a motor”.
  - f) Often talks excessively.
  - g) Often blurts out an answer before a question has been completed.
  - h) Often has trouble waiting their turn.
  - i) Often interrupts or intrudes on others (e.g., butts into conversations or games)

**Based on the types of symptoms, three kinds of ADHD can occur:**

- i. Combined Presentation: if enough symptoms of both criteria inattention and hyperactivity-impulsivity were present for the past 6 months.
- ii. Predominantly Inattentive Presentation: if enough symptoms of inattention, but not hyperactivity-impulsivity, were present for the past six months.
- iii. Predominantly Hyperactive-Impulsive Presentation: if enough symptoms of hyperactivity-impulsivity, but not inattention, were present for the past six months. Symptoms can change over time, the presentation may change over time as well.

**Hyperactivity and its effect on classroom behaviour**

The hyperactivity component refers to excessive motor activity, and is manifested in behaviours such as fidgeting, leaving one’s seat, climbing or running around even in situations when one is expected to remain in place, talking excessively, and having difficulty waiting one’s turn (American Psychiatric Association, 2013). In teenagers and adults, this restlessness is more likely an internal feeling than an outward. The hyperactive behaviour of children with ADHD often worsens at school due to the specific demands placed on self-regulation and motivation. Their behaviour is characterized by extreme energy, intensity, and impulsivity, which is often inappropriate and lacks goal-direction. Despite being highly active, these children achieve very little compared to other children with high

energy levels, as their movements are often irrelevant to the task at hand. This lack of goal-directed behaviour can significantly impact their ability to focus and succeed in school and other structured environments. They behave very differently in situations which require them to restrain motor activity—to slow down or sit still in response to the organized task demands of the classroom. (Mash & Wolfe, 2010)

### **Impulsivity and its impact on social interaction and learning**

Impulsivity refers to acting without thinking first, Impulsivity, a primary symptom of ADHD. Children who are impulsive seem unable to bridle their immediate reactions or think before they act. This behaviour is known as 'impulsive blurting,' which refers to the tendency to speak without thinking, often interrupting others or sharing inappropriate or irrelevant comments. It's very hard for them to stop an ongoing behaviour or to regulate their behaviour in accordance with demands of the situation or the wishes of others. As a result, they may blurt out inappropriate comments or give quick, incorrect answers to questions that are not yet completed. Because it is difficult to wait or take turns, they interrupt conversations, intrude on others' activities, and lash out in frustration when upset (Mash & Wolfe, 2010, p.124). This behaviour can significantly impact social interactions and relationships, leading to misunderstandings, conflicts, and feelings of frustration or exclusion. They also experience difficulty resisting immediate temptations and delaying gratification (Mash & Wolfe, 2010).

### **Cognitive Aspect Affected by Attention Deficit Hyperactivity Disorder (ADHD)**

ADHD impacts cognitive processes like working memory, processing speed, and executive function, influencing how individuals manage tasks, organize information, and control impulses. ADHD affects executive functioning, which refers to a set of mental processes and skills that help individuals prioritize, plan, organize, and adapt to reach a goal. Many experts agree that executive function challenges represent some of the core ways ADHD affects a person (Rosella, Berenguer, Baixauli, Mira, Martinez-Raga & Miranda, 2020). These cognitive abilities are crucial for achieving goals, problem-solving, and self-regulation in daily activities such as cooking dinner or getting to work on time. A person with ADHD may have trouble organizing, remembering instructions, staying on track, and following through with a task. These are signs of executive dysfunction, in which the brain struggles with memory, attention, and self-regulation (Rabinovici, Stephens & Possins, 2015).

Working memory is a crucial cognitive function affected by ADHD. It refers to the ability to temporarily hold and manipulate information in the mind for tasks such as reasoning, comprehension, and learning. It is a limited-capacity system that enables you to store and process information temporarily, and it is involved in the tasks you are working on at any given moment (Rabinovici, Stephens, & Possins, 2015).

Moreover, working memory is vital for high-level functions. You use it to store and process the information needed for planning, prioritizing, and organizing. Individuals with ADHD often exhibit deficits in working memory, which can impact various aspects of their lives, including academic performance and social interactions. Processing speed encompasses many components including perceptual, cognitive and output speed. Slow processing speed can affect speed of performance on various tasks such as reasoning, rate of new learning, comprehension of new information and working memory, and it can lead to mental fatigue (Cepeda, Blackwell, & Munakata, 2013). Some research suggests that individuals with ADHD may have slower processing speed, meaning they take longer to complete mental tasks or respond to stimuli. This can impact academic performance and lead to difficulties in tasks that require quick thinking or decision-making. ADHD doesn't impair processing speed, but can make their processing speed less efficient when the tasks become more demanding, impaired processing speed is likely due to inattention dimensions in ADHD rather than hyperactivity

or impulsivity (Kibby, Vadnais & Jagger-Rickels, 2019).

### **Educational Intervention for Students with Attention Deficit Hyperactivity Disorder (ADHD) Classroom Accommodation**

The classroom setting can present obstacles for a child with attention deficit hyperactivity disorder. Focusing attention and sitting quietly at a desk, skills often linked to academic success, are almost impossible tasks (American Psychiatric Association, 2000). Tasks particularly challenging for these students, such as staying seated, listening attentively, and maintaining focus, are expected of them throughout the day. Listening to, following directions, recalling and retaining information, and completing assignments are overwhelming experiences for such students, as their minds wander, and they become distracted by their attempts to take in the busy classroom around them (Reis, 2002).

When considering classroom accommodations for learners with ADHD, there is a need to prioritize seating arrangements to minimize distractions and foster learning. It's also essential to encourage frequent breaks between instructions to avoid overwhelming the students. Classroom learning materials should include colorful elements such as charts, maps, and text to make lessons more engaging and interesting for students. Additionally, interactive activities and hands-on learning experiences can further enhance their understanding and retention of the material.

### **Behavioural Intervention**

The behavioural classroom management approach promotes positive classroom behaviours in students through reward systems or daily report cards, while discouraging negative behaviours. Teachers can set clear expectations and boundaries around behaviour in the classroom communicating the consequences of breaking those boundaries and enforcing them consistently. This teacher-led approach has been shown to influence student behaviour constructively, increasing academic engagement. Although tested mostly in elementary schools, behavioral classroom management has been shown to work with students of all ages (Evans, Owen & Bunford, 2014). Teachers can provide motivating rewards for achieving medium- or long-term goals and develop a personalized behaviour plan through organizational training. Organizational training teaches children time management, planning skills, and ways to organize school materials to optimize student learning and reduce distractions. This management strategy has been tested with children and adolescents (Evans, Owen & Bunford, 2014).

### **Use of Technology to Support Learning**

Traditional methods of addressing attention issues, such as environmental, instructional, and organizational techniques, have been beneficial for students. However, the use of technology in today's classrooms is changing the way students learn, offering more benefits. It is important to consider how digital tools can specifically support students with ADHD. Some teachers have expressed concerns about increasing distractions impacting students, as well as poor time management skills and potentially diminished capacity for critical thinking, among other issues (Purcell, Rainie, Heap, Buchanan, Friedrich, Jacklin, Chen & Zickuhr, 2012). When implemented properly, tech devices and apps can help diminish focus issues and assist students in engaging with their work. Assistive technologies enhance reading and studying, improve cognitive functions such as processing speed, working memory, attention, and self-control, and increase productivity by minimizing distractions. They also enhance organization and time management, helping individuals with ADHD stay organized and on top of their responsibilities.

Assistive technology like reminder and alarm devices offer invaluable support to individuals with ADHD. These tools help mitigate challenges related to forgetfulness and time management by providing structured, timely cues for tasks, appointments, and medication schedules. They assist individuals in staying organized and on track.

Speech recognition software is a game-changer for individuals with ADHD. This high-tech assistive technology allows users to input text and control their devices using voice commands, reducing the cognitive load associated with typing or writing.

Audio books and screen readers offer substantial advantages to individuals with ADHD by providing alternative methods to access information. Audio books enable auditory learning, allowing individuals to absorb content without requiring sustained reading focus. Screen readers, conversely, convert text on digital screens into spoken words, aiding comprehension and lessening the cognitive load associated with reading.

### **Suggestions**

Here are some strategies suggested to assist children with ADHD in staying organized, following directions, and managing symptoms:

**Managing distractibility:** Children with ADHD may be easily distracted by noises, people passing by, or their thoughts, often causing them to miss important information in the classroom. They struggle to maintain focus on tasks that require sustained mental effort. Distractibility can be managed by:

- i. Seat children with ADHD away from doors and windows to minimize distractions. For children who struggle significantly with distractions, consider seating them near the front of the class, closer to the teacher, which may be beneficial.
- ii. Provide regular breaks for children with ADHD. Since they often find it challenging to sit still for extended periods, giving them frequent chances to move around can be highly beneficial.
- iii. Break down large assignments into smaller tasks. This approach can be beneficial for children with ADHD who may feel overwhelmed, as it reduces the overall workload into more manageable parts.

**Managing impulsivity:** Children with ADHD may act before thinking, creating difficult social situations in addition to problems in the classroom. Kids who have trouble with impulse control may come off as aggressive or unruly. This is perhaps the most disruptive symptom of ADHD, particularly at school. Methods for managing impulsivity include:

- i. A plan for giving children with ADHD a sense of control over their day. Display the day's schedule on the board or a piece of paper, crossing off each item as it is completed. This can help children with impulse control issues feel more in control and calmer when they have a clear idea of what to expect.
- ii. Acknowledge positive behaviour verbally, specifically praising the child and highlighting what they did correctly. This helps reinforce good behaviour.
- iii. Administer consequences promptly after misbehaviour occurs. Provide a clear explanation, ensuring the child understands their inappropriate actions.

**Managing fidgeting and hyperactivity:** Students with ADHD often exhibit constant physical motion, making it challenging for them to remain seated. These children may engage in behaviours such as jumping, kicking, twisting, and fidgeting, which can disrupt the learning environment. methods to manage fidgeting and hyperactivity include:

- i. Encourage physical activity for a child with ADHD by involving them in sports or ensuring they have time to run around before and after school. Additionally, physical education (PE) classes.
- ii. Engage children with ADHD by assigning them tasks or errands, such as sharpening pencils or cleaning the classroom board, even if it only requires them to walk across the room.
- iii. Utilize a timer to help students with ADHD manage their time. Setting clear limits on the duration of an activity can make it easier for them to stay engaged. Timers can also be used to indicate how

much time is left in an activity, when a break will occur, or to signal transitions.

## Conclusion

ADHD can significantly impact learning, affecting various cognitive functions such as working memory, processing speed, and executive functioning. Students with ADHD may struggle with maintaining focus, staying organized and following instructions, which can hinder their academic performance. However, with the right support, including structured environments, clear expectations, and appropriate interventions, individuals with ADHD can effectively manage their symptoms and succeed in their educational endeavours. Educators, parents, and psychologists need to work together to provide the necessary accommodations and strategies to help students with ADHD thrive academically.

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