

Understanding Dyslexia among School-Aged Children in Nigeria: A panacea for Social Inclusion

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Abstract

All children differ from one another at varying levels. However in some children, the learning difficulties are more serious and the children deviate more significantly in one way or another. These are special needs children who are different and whose behaviour deviates significantly from the norm. This paper examined the understanding of dyslexia among school aged children in Nigeria. The paper went further to discuss concept of learning disability, dyslexia, sign/symptoms, types, causes and management of dyslexia. It is recommended that series of seminars and workshops should be organized by schools, Government, and NGOs for teachers, school psychologists and counsellors in order to facilitate the understanding of dyslexia, support for dyslexic children and their inclusion in their communities.

Keywords: Exceptionality, dyslexia, children, neurological, inclusion, learning, disorder

Introduction

In the time past, individuals with learning disabilities, like other disabled ones, have been confronted with poor life expectations mainly due to social exclusion. They faced stigmatization, prejudices, fear and often end up disconnected, living in isolation and facing discrimination from their communities. For many learning disabled individuals, social exclusion has been the major factor which has limited them to fewer opportunities in life. Previously, they were withdrawn from the communities and institutionalized, but in recent times, there has been a move in developing countries to take positive steps and change direction towards learning disabilities. Also, with the adoption of the Sustainable Development Goals (SDG) and the “Leave no one behind” agenda, there is a global move to ensure that marginalized groups and those with disabilities are included and accounted for in the mainstream development (Jolley, Lynch, Virendrakumar, Rowe & Schmidt, 2017). For children, social inclusion means finding ways for the child to integrate into the mainstream schools if support is available; this is necessary because social exclusion stands in the way of children's wellbeing the world over. All children, like adults, have a right to an acceptable standard of living, access to social services and a

life free from bias and stigma. Therefore, it is imperative that teachers, school psychologists and counsellors understand the nature and type of this disorder in order to help dyslexic school-aged children manage their situations so that they can be useful to themselves and for proper inclusion in their communities.

Concept of learning disability

Learning disability is a group of heterogeneous disorder and neurologically-based processing problem which can interfere with learning basic skills such as reading, writing and/or mathematical calculation. They may affect the acquisition, organization, retention, understanding or use of verbal or non-verbal information (Putting Canadian Face on Learning Disabilities (PACFOLD), 2016). According to Russell, Bryant and House (2017), it is significantly reduced ability to understand new or complex information, to learn new skills, with reduced ability to cope independently which started before adulthood with a lasting effect on development. In other words, learning disability may be regarded as a condition that affects an individual's ability in the area of spoken or written language, mathematical calculation, coordination of movement etc. As stated in the fifth edition of the *Diagnosics and Statistical Manual of Mental Disorder* (American Psychiatric Association, 2013), specific learning disorder is a single diagnosis introduced to describe all the conditions of learning disabilities.

Therefore, a specific learning disorder is defined as neuro-developmental disorder of biological origin which manifests in learning difficulties and problems in acquiring age-appropriate academic skills during the early school age. These learning difficulties can manifest in any of the following essential skills: reading, written expression or mathematical calculation. These difficulties should last for at least six months and should not be attributable to intellectual disabilities, lack of visual or auditory acuity and other mental neurological problems of daily living (Handler & Fierson, 2011). Learning disabilities occur in young children but are not usually recognized until a child reaches school age. It can be life-long challenge; but with appropriate support and interventions, individuals with learning disabilities can achieve success in school, at work, in relationships and in communities. Learning disabilities (LDs) are usually associated with other comorbidities such as Attention Deficit Hyperactive Disorder (ADHD), oppositional defiant Disorder, obsessive-Compulsive disorder, anxiety and depression (Masi & Gignac, 2015). LDs according to Willcut and Pennington (2000) are presumed to be neuro-biological in origin due to yet-unidentified brain pathology, hereditary and environmental factors.

Generally LDs affect approximately 5% of school-aged children globally (Al-Mahrezi, Al-Futaisi & Al-Mamari, 2016). They went further to state that specific categories of learning disability include dyslexia, dysgraphia, dyscalculia, non-verbal learning disorder, apraxia of speech, central auditory processing disorder. Dyscalculia is a disorder that specifically affects one's math capabilities. Dyscalculia can range from an

ability to order numbers correctly and extend to limited strategies for problem solving. Children with math disorders may have trouble performing basic math calculations or they may have difficulty with concepts like time, measurement or estimation. Dysgraphia is difficulty with written expression. Children with dysgraphia have trouble organizing their thoughts coherently. Non-verbal learning disorder (NLD) is characterized by a significant discrepancy between higher verbal skill and weaker motor, visual-spatial and social skills. Typically, an individual with NLD has trouble interpreting non-verbal cues like facial expression or body language and may have poor coordination. Central auditory processing disorder is a condition that adversely affects how sound that travels unimpeded through the ear is processed or interpreted by the brain. Individual with this disorder do not recognize subtle differences between sounds in words, even when the sounds are loud and clear enough to be heard. They can also find it difficult to tell where sounds are coming from, to make sense of the order of sounds or to block out competing background noises. Apraxia of speech (AOS) is an acquired oral motor speech disorder affecting an individuals' ability to translate conscious speech plans into motor plans which results in limited and difficult speech ability. Individuals with AOS have difficulty connecting speech messages from the brain to the mouth. In other words, many children may have trouble reading, writing, or performing other learning-related tasks at some point. This does not mean they have learning disability. A child with a learning disability often has several related signs, and which do not go away or get better over time. The signs of learning disability vary from person to person.

Concept of dyslexia

The word dyslexia was got from two Greek words: dys (meaning impaired, inadequate, lack of) and lexicon (meaning, words and/or verbal language). Dyslexia is widely recognized as the most common learning disability of neurological origin. It is often referred to as a specific learning difficulty because the dyslexic individual also has strength and areas of ability which when properly channelled make for success (Sutton & Shield, 2016). American Psychiatric Association (2013) describes dyslexia as a brain-based difficulty in reading. International Dyslexia Association (IDA, 2002) sees dyslexia as being neurological in nature, characterized by difficulties with accurate and/or fluent word recognition and poor spelling and decoding abilities which result from phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Dyslexia is not a disease but a syndrome and life-long condition. The symptoms of this condition vary from one child to another but usually the child has normal or above average intelligence. Some children have problems with speech and poor vocabulary (Kassotakis, 2015) and some have problem in decoding symbols and sounds that are not registered properly in the brain. For example, some children start to see letters as mixed up as in reading 'b' for 'd', reads backwards as in 'tac' for 'cat' and do not see number in line which results in incorrect computation.

Signs and symptoms of dyslexia in school-aged children

Signs of dyslexia can be difficult to recognize before a child enters school, but some early clues may indicate a problem. Once the child reaches school age, the child's teacher may be the first to notice a problem. Severity varies, but the condition often becomes apparent once the child starts to read. According to Minnis (2017), a dyslexic child reads well below the expected level for his age, has problems processing and understanding what he hears, has difficulty finding the right word or forming answers to questions, has problem remembering the sequence of things, has difficulty seeing similarities and differences in letters and words, has difficulty spelling, spending an unusually long time completing tasks that involves reading or writing and avoids activities that involves reading.

Types of dyslexia

The following are types of dyslexia:

a) **Developmental dyslexia:** This type of dyslexia is caused by problem with brain development during the early stages of foetal development. This type diminishes as the child matures. It is more common in boys. Children with this type of dyslexia find it difficult to recognize printed words, have great difficulties sounding out unfamiliar words and often also read slowly (Hulmes & Snowling, 2016).

b) **Acquired dyslexia:** This type of dyslexia occurs as a result of some kind of brain trauma or injury to the brain that controls reading and writing (Coslett & Turkeltaub, 2016). It is rarely seen in today's school age population.

c) **Peripheral dyslexia:** This type of dyslexia is sub-divided into neglect, attention and letter-by-letter reading dyslexia. Neglect dyslexia is a type of dyslexia in which either the initial parts of words are misread (left neglect dyslexia) or the terminal part of words are misread (right neglect dyslexia). In attention type, there is a problem when there are several words on the page. In the dyslexic view, letters may migrate from one word to another and the individual may read 'spade' as 'glade'. In letter-by letter reading dyslexia, the child does not read phonetically but rather convert letters into their names such as 'aitch' and 'vee' for 'h' and 'v' instead of their sound 'huh' and 'vuh' (Wilson & Lomgan, 2010).

d) **Central dyslexia:** This is sub-divided into non-semantic reading dyslexia, surface dyslexia, phonological dyslexia, deep dyslexia (Sexton, Gelhorn, Jill & Class, 2012). In non-semantic, the comprehension of written words is very poor. Affected children have impaired semantic system but are still able to read word aloud using the connections between the visual input lexicon. In surface dyslexia, there is high reliance on the lexical procedure in reading aloud. Children pronounce once familiar words as if they were unfamiliar, breaking them down into their component letters and letter groups, converting each into phonemes and pronouncing the resulting sound sequence. They are prone to misreading irregular words and may pronounce them as if they were regular words. For example 'island becomes Izland, Sugar becomes 'Sudger' and broad becomes 'brode;' for phonological dyslexia, the affected children are not able to make

effective use of the sub-lexical reading procedure. They are unable to read unfamiliar words or invented non-words. In deep dyslexia, the individual finds words like baby, church or table which have concrete, imaginable reference easier to read than abstract words like belief, truth.

Causes of dyslexia

The main internal and external causes of dyslexia are as follow:

a) Gene and hereditary: Genes carry DNA which is the blueprint for inherited characteristics and they are responsible for the transmission of traits from parents to their offspring. Some type of dyslexia runs in families. It then means that, some of the parents of the children with dyslexia also have it and some of the child's siblings may struggle with reading (Burraco, 2010). Several genes (DCDC2, DYX1C1, KIAA0319) have been found that are linked to reading and language processing issue. Some of these genes impact brain development, while others impact how the brain communicates.

b) Differences in the brain function: Temporal lobe is responsible for phonological awareness and decoding/discriminating sounds. The frontal lobe handles speech production, reading fluency, grammatical usages and comprehension, making it possible to understand simple and complex grammar in our native language. Parts of the brain involved in reading do not function the same way in the people with dyslexia as they do in others (Carreira, Seghier, Baquero, Estevez, Lozano, Delvin & Price, 2009). Functional MRI shows that some areas are less active, those areas make it hard for children with dyslexia to learn to read.

c) Brain trauma or injury: Brain injury is brain damage resulting from physical trauma occurring after birth. This type of dyslexia can occur as a result of some form of brain trauma, accident, stroke or brain injury to the area of the brain that control reading and writing (Logsdon, 2010). Traumatic brain injury can result in physical, cognitive, social, emotional and behavioural symptoms and outcome can range from complete recovery to permanent disability or death (Williams & Wood, 2010).

d) Environmental risk factors: Premature birth or low birth weight, exposure during pregnancy to nicotine, drugs, alcohol or infection and unfavourable events during the prenatal period could disrupt normal brain development and lead to dysfunction. Kovachy, Adam, Tamaresis and Feldman (2015) found that school-aged children born preterm had poorer decoding and reading comprehension performance than their full term counterparts.

From the discussion so far, it can be summarized that for children, each learn and develop at his own pace, and reading is not different from other skill building. It is common for children to find reading challenging at one point or another. But if learning to read becomes an ongoing struggle that leaves a child falling behind his peers, it is possible that he has a learning disorder known as dyslexia which obviously is not a disease but a condition someone is born with, and it often runs in families. People with dyslexia are not stupid or lazy. Most have average or above average intelligence.

Effect of dyslexia

Dyslexia can lead to a number of problems which include:

a) **Trouble learning:** Proficient reading is an essential tool for learning a large part of the subject matter at school. A dyslexic is at disadvantage in most classes and those who may find the acquisition of these literacy skills difficult can also suffer a lot of anguish and trauma when they may feel mentally abused by their peers (Siegel, 2006).

b) **Social problems:** Dyslexic children may be physically and socially immature in comparison to their peers. This can lead to low self-esteem, behaviour problem, anxiety, aggression and withdrawal from friends, parents and teachers. They have difficulty reading social cues and may be oblivious to the amount of personal distance necessary in social interaction or insensitive to other people's body language (Ryan, 2004).

c) **Problem in adulthood:** The inability to read and comprehend can prevent a child from reaching his or her potential as the child grows up. In adulthood, as reiterated by Villines (2017), it leads to difficulty reading including reading aloud, slow and labor-intensive reading and writing, problem spelling, avoiding activities that involve reading, mispronouncing names or words or problem retrieving.

Management of dyslexic school-aged children

Many children with dyslexia also have ADHD, some also have anxiety or/and depression. There are no medications for dyslexia but effective medications are available for the treatment of anxiety and/or depression that often co-occur with dyslexia. Counsellors, teachers and other professionals who focus on learning can help children with reading and language challenges through the use of multi-sensory learning approach, Cognitive Behavioural Therapy (CBT), Behavioural Therapy, use of software/apps that can make reading easier. Some management strategies are:

a) **Multi- Sensory Learning Approach (MSLA):** Multi- Sensory Learning Approach is a term used to describe the teaching method that involves engaging more than one senses at a time; it involves the use of auditory, visual and kinaesthetic learning or tactile pathway. A multi-sensory approach can enhance memory of learners by stimulating their brains and engaging them more deeply in the subject matter and learning. For example, they can use sand paper letter words and sand writing. In sand paper letter words, the child is made to place a strip of paper over a sand paper and using crayon, he is made to write a word on the paper. After the word is written, the child is made to trace the word while spelling the word aloud. For sand writing, a handful of sand is placed onto a cookie sheet and the child is made to write a word with his fingers in the sand; while the child is writing the word, he is made to say the letter, its sound and then read the whole word aloud. Once the child has completed the tasks, he can then erase it by wiping the sand away. This activity can also work well with shaving cream, finger paint and rice. They can also learn phonics and spelling or they learn syllable by tapping them out with their fingers, clap out the ones in their names, help them with phonics-connecting letters with sounds, breaking words into sounds and blending sounds into words. This approach enables children with dyslexia to learn materials by repetition and

by what they have learnt in different context and to use sight, touch and sound to connect letters and their sounds (Cox, 2019).

b) Cognitive Behavioural Therapy (CBT): This therapy can help anxiety and depression that most at times accompany dyslexia (Holmes, 2018). CBT is a form of psychotherapy that examines how negative thoughts or cognition contribute to anxiety and depression. It involves three steps: identifying negative thoughts, challenging negative thoughts, replacing negative thoughts with realistic thoughts. CBT is appropriate for all ages including children, adolescents and adults. One of the important techniques in CBT for children with anxiety is called exposure and response therapy, in which the child is exposed to the things that trigger the anxiety in structured, incremental steps and in safe setting. Exposure therapy changes the behaviour in order to get rid of the fear.

c) Behavioural Therapy: This therapy can help Attention Deficit Hyperactive Disorder (ADHD). It is a form of therapy that seeks to identify and help to change potential self-destructive or unhealthy behaviour (Evans, Owen & Nora, 2013). It functions on the idea that all behaviours are learnt and that unhealthy behaviour can be changed. At home, parents and caregivers should check out for apps, games and software that can help make reading easier. They should also seek advice on how to teach children with dyslexia to learn sight words.

Conclusion and Recommendations

Dyslexia is a specific learning disability in reading. Children with dyslexia have trouble reading accurately and fluently. They may also have trouble with reading, comprehension, spelling and writings. Teachers, school psychologists and counsellors have important role to play in the identification of children at risk of dyslexia. Any sign of problems in learning to read, even very early in a school, difficulty or behavioural problems should be taken seriously, and investigated because school phobia and/or somatic complaints that appear on school days may be a sign of a possible learning disability.

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