

Assessing Knowledge of Teachers About Attention Deficit Hyperactivity Disorder and Its Prevalence Rate in Primary Schools in Pemba District, Zambia.

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ABSTRACT

This study was undertaken to assess the knowledge of teachers about ADHD and its prevalence rate in primary schools of Pemba District in Southern Province of Zambia. To get the desired findings, the study was guided by four objectives which are: -

To determine teachers' knowledge about ADHD? To investigate challenges teachers' face in teaching pupils suspected with ADHD and to assess the prevalence rate among pupils in the District.

The researcher adopted a Case Study design in which both qualitative and quantitative methods were employed owing to their flexibility and adaptability. These methodologies also enabled the researcher to come up with long lasting solutions to the problem when need arose. The sample consisted of 100 respondents that composed of 50 teachers chosen randomly from the 5 selected primary schools in Pemba District. Besides that, 50 pupils from the same schools were sampled whence the checklist was administered to determine the prevalence rate of suspected ADHD in the district.

The study found that most of the teachers were not knowledgeable about the existence of ADHD condition. Apart from that, some teachers who claimed had some knowledge about ADHD had no experience on handling learners with ADHD as they were unable to identify learners with ADHD. The other few (teachers) who were able to identify learners with the condition faced a number of challenges in teaching

such learners. The challenges include; Classroom management as constant movement of such learners disturbed the smooth transition of the lesson. While other such learners lacked concentration which in turn had negatively impacted their academic performance.

The prevalence percentage of those that showed the symptoms of ADHD was 14% of the total population recording an increase to the research that was done in Lusaka urban by Tembo in 2014 which showed a prevalence of 9.1%.

Based on the findings of this research, this study recommended workable strategies to a successful handling of learners with ADHD. Thus, every teacher ought to be skilled and trained on how to respond to special education learner needs. On top of that there should be sufficient opportunities for professional development of educators through special education programmes aimed at identifying and handling learners with ADHD. The government should also formulate a policy whose objective must be to harness the identification and treatment of children with ADHD both in classroom and in hospitals to sensitize the pregnant mothers on maternal health. Aside from that, teacher training institutions should review their curriculum so that special education becomes a prerequisite to all teacher trainees. This in a way would prepare and equip teachers to work in any environment with ADHD learners

CHAPTER ONE

INTRODUCTION

1.0 Background of the study

From the onset, it is worthwhile safe to assert that Attention-Deficit Hyperactivity Disorder (ADHD) is a neurobehavioral disorder that typically begins in childhood and often persists into adulthood. ADHD is characterized by developmentally inappropriate levels of attention and hyperactivity resulting in functional impairment in academic, family and social settings (Burns et al., 2017). This implies that it is a clinically heterogeneous condition in which symptoms overlap or co-occur with other conditions

ADHD is said to be a developmentally inappropriate levels of attention and hyperactivity resulting in exhibiting some inappropriate behaviours (Al Azzam et al., 2017). The behaviours are inclusive of these, but not limited to: (a) off task behaviours (b) poor peer interactions (c) difficulty following directions (d) climbing and running when inappropriate and (e) inability to refrain from interrupting during conversations (Kim et al., 2017).

Furthermore, ADHD is said to be a condition, not an illness; it is a neurobiological disorder that the person will have to manage for the rest of their lives. With age, some of the symptoms become more overt and the condition can be painful for the young person, who could probably just be frustrated by it.

According to NAMI (2006) ADHD is an illness that is characterized by inattention, hyperactivity and impulsivity. This in simplistic terms follows that ADHD is a condition of the brain that makes it hard for children to control their behaviour. Moreover, it is one of the most common chronic conditions of childhood. All children have

behavioural problems at times. Children with ADHD have frequent, severe problems that interfered with their ability to live normal lives. As a matter of fact, ADHD is the most commonly diagnosed behaviour disorder among children and adolescents. There are basically three different types of ADHD. These are: hyperactivity/impulsivity type, inattention type and combined.

Likewise, APA (2013) elaborated that ADHD is a pattern of behaviour that interfered with development and functioning of the human body. On the other hand, Johns (2012) defined ADHD as a neurological base that make it difficult in controlling behaviour in school and society setting. Johns further observed the following characteristics which include; a) Fidgeting or squirming, b) excessive climbing or running when not appropriate, c) difficulty playing or engaging in activities quietly, and d) excessively talks others are; e) making careless mistakes, f) difficulty maintaining attention to tasks or play, g) appearance of not listening when being spoken to, h) forgetful, and i) difficulty organizing tasks or activities

From a medical viewpoint, ADHD is defined by maladaptive levels of inattention, hyperactivity and impulsivity (National Institute of Clinical Excellence (NICE, 2009). Diagnostic criteria in the UK are determined by two medical classification manuals: The Diagnostic and Statistical Manual 5 (DSM 5) published by the American Psychiatric Association (APA, 2013) but used across the world and The International Classification of Mental and Behaviour Disorders 10th revision (ICD 10) developed by the World Health Organisation (WHO, 1992) and used across Europe. The manuals adopt almost identical criteria for the presentation of symptoms, requiring evidence of symptom persistence and impairment across two or more settings.

Similarly, (RCP, 2016) defines ADHD as a behavioural disorder. On the contrary clinical samples show that boys are more commonly affected than girls at ratios as high as six to one (Cormier, 2008). Whilst there seems to be a shared understanding regarding the defining features of hyperactivity and attention difficulties, differing terminologies, the use of DSM 5's Attention Deficit Disorder and ICD 10's Hyperkinetic Disorder can cause confusion for those working to support children who experience such problems (RCP, 2016).

Within the education system, ADHD is described under the Special Educational Need and Disability (SEN-D) category of social, emotional and mental health Department for Education (2015). This combines its status as a mental health disorder to recognise implications on learning, placing it firmly within statutory guidelines for SEN. Furthermore, this brings ADHD into the realm of Educational Psychologists (EPs) who are often involved in supporting schools to meet the needs of students with SEN.

Additionally, Benedictus et al., (2007) argued that Children with ADHD pay the price for their problems in class especially in low grades, scolding and punishment, teasing from peers, and low self-esteem is the order of the day. The effects of teachers' being frustrated with students who exhibit ADHD are seen every day, the frustration can be seen in the way teachers approached the students. Gargaro (2009) also asserted that capability to learn because of the unique learning style of these types of students, the effects of traumatic brain injuries that have been connected to the cause of AD/HD. As a consequence, makes it more difficult for the child to learn with their counterparts, in classrooms setup and teachers strive to attend to such learners but to no avail because of little knowledge on existence of such

conditions mainly they are treated as trouble makers who does not want to learn.

In most instances a student with typical ADHD will frequently experience being told off, being told to do better and be better. They will sit countless times in an exclusion of some sort thinking about how bad they are and how they aren't liked by the other children in their class. The accretion of these experiences leads the student to a hatred of school and a disregard for rules which don't seem to apply to them.

Children with ADHD tend to be disorganized; for instance, they mess up rooms and their daily activities tend to be chaotic. Bedrooms are likely to be filled with partly completed tasks and notebooks are messy; desk drawers are likely to be cluttered with unfinished letters or assignments (Cobb, 2007). However, pupils with the disorder are highly intelligent, but they tend to be underachievers because they cannot concentrate or sustain interest. As a result, family, friends, and teachers become impatient and expect them to fail (Biederman, Spencer, and Newcorn 2007). Children with ADHD also have trouble adapting to change. Their lives are so full of tumult that even a minor additional change in their routine can be upsetting or can even create a crisis. For example, a parent goes away on a trip, a new teacher takes over a class, the family moves to a new city, or a pet dies. (Herpertz, 2003).

Besides that, children with ADHD live under stress so severe that they cannot tolerate frustration, and when they are frustrated, they are likely to become angry. The anger tends to come suddenly and explosively, accompanied by slamming doors, harsh words, tantrums, and leaving important meetings in frenzy. Children get into fights; adults lose jobs and alienate friends (Herpertz, 2003). Afterwards, they may be sorry, but the damage is done. With their high level of

frustration, children with ADHD are impatient. They hate to wait in line, and delays of any kind can make them frantic. Whatever is going on – a trip, a movie, a class, a discussion – they want it to go quickly and be finished (Biederman, Spencer, Newcorn, 2007 and Cobb, 2007).

Not only that children with ADHD often go against the limits and boundaries set by their parents, teachers and other authority figures due to their condition. Some of these children consistently participate in problematic behaviours in schools that include, fighting, bullying, stealing, absenteeism, being unruly to authorities and many more. Such behaviours affect their families, academic, social and personal function (Cobb, 2007). Such children present a concern to teachers, parents and the community at large.

Be that as it may the results provide an important support for the diagnostic validity of ADHD, and argued against the hypothesis that ADHD is a cultural construct that is restricted to the United States or any other specific culture. Additionally, Ross and Ross, (1982) observed that hyperactivity is found in all cultures, although prevalence figures differ. The term ADHD may be new but the children who display overactive and unrestrained behaviour have been around from time immemorial. Important early accounts of the disorder include that of the English physician called George Still who described a group of boys with a ‘defect in moral control’ as inattentive, impulsive, overactive, lawless, and aggressive, among other things (Barkly, 1996). In the United States, a 1917-1918 encephalitis epidemic aroused interest in the individuals who suffered this brain infection and who were left with similar attributes of hyperactivity. A similar clinical picture was also noted among children who had suffered head injury, birth, trauma and exposure to infections and toxins (Barkly, 1996).

ADHD is one of the most prevalent disorders that teachers will encounter in the classroom (APA, 2013 & Centre for Disease Control and Prevention, 2013). Meaning that behaviours typical of ADHD can be stressful and frustrating for teachers when encountered. The Individual Disabilities Education Act (IDEA) was purposefully created to ensure that students received the necessary services to be successful in the classroom, as well as, in life. In order for these services to be rendered, an appropriate diagnosis must be made and below are some of those acts.

Historically, special education legislation and litigation has been about the access to and quality of the instruction provided to students with disabilities. Yell, (2012, 49) maintained that, “state-required or state-sanctioned segregation solely on the basis of a person’s unalterable characteristics (e.g., race or disability) was unconstitutional.” This explicitly means universality access to educational services; opening access to public education for all individuals regardless of race or disability. Similarly, Mills, Board of Education (1972) advocated for a “publicly supported education” be provided to all students with disabilities and procedural safe guards were put in place to ensure that requirements of the law are being upheld (Yell, 2012). These two cases became the framework for the Rehabilitation Act, in particular Section 504, and the Education for All Handicapped Children Act.

In this regard Section 504 of the Rehabilitation Act of 1973 was set forth as a civil rights law to protect those with disabilities (Yell, 2012). The law formally identified individuals with handicaps as a person who has a physical or mental impairment that substantially limits one or more of that person’s major life activities, or a person who has a record of such an impairment or who is

regarded as having such an impairment (Yell, 2012). Any agency receiving federal funding is obligated to comply with the law and the necessary requirements. Creating opportunities equal to their nondisabled counterparts is the essential provision of this law, which can be accomplished through accommodation and modification of services or programming (Yell, 2012).

As for Education for All Handicapped children Act of 1975 (EAHCA) established access to education for all students regardless of their disability. It indicated that qualified students with disabilities had the right to (a) non-discriminatory testing, evaluation, and placement procedures; (b) education in the least restrictive environment; (c) procedural due process, including parent involvement; (d) a free education; and (e) an appropriate education” (Yell, 2012, p. 53). However, the act failed to identify ADHD as an eligible disability for services. “This led to many public schools to deny access for children with ADD/ADHD to such services and much parental and teacher exasperation in trying to get educational recognition and assistance for this clearly academically handicapping disorder” (Barkley, 1998, p. 32)

ADHD accounted for about 5% in children of school going age worldwide (APA, 2013). Approximately about 11% of the children between ages of 4-17 are diagnosed with ADHD. According to Joshi and Angolkar (2018) ADHD is more common in boys than in girls. In Africa, the prevalence of ADHD ranges from 5.4 to 8.7%. This, on average, gave a probability of a classroom had at least one student who exhibited the behaviours of this disorder and necessitated appropriate interventions and accommodations (Farahat et al., 2014)

More so, ADHD prevalence in Africa leaves much to be desired which implies that an intervention

ought to be found. Empirical evidence shows that the prevalence in Africa is real. In as much as there is empirical evidence that justifies the prevalence of ADHD in Africa, the prevalence of ADHD is not clearly known in Zambia as there are very few studies that have focused in this domain. In Zambia, the statistics about the number of children with ADHD is not known as there seems to be few empirical studies conducted to ascertain the prevalence of this condition in different parts of the country specifically in rural areas. The Ministry of Education Statistical Bulletins of 2005 and 2009 highlighted that 88,030 and 128 017 pupils required Special Education Needs (SEN) respectively. While this was the case, no category of children with ADHD was included.

In a bid to address this problem, Tembo (2014) conducted a research to assess the prevalence rate of ADHD learner in Lusaka urban schools and obtained 9.1% prevalence rate. Despite having Tembo’s work, the knowledge of teachers about ADHD as well as the prevalence rate in rural areas such as Pemba District of Southern Province is still unknown.

1.2 Statement of the Problem

Ministry of Education (1996) policy document provides and advocates for Education for All learners regardless of their, economic, social, physical, mental health disorder where ADHD belongs. As a result, ADHD learners are not in any way exceptional to this policy document. ADHD is most often identified when children first start school. However, its symptoms may persist and continue to cause impairment throughout adolescence and adulthood (Ramy et al., 2018).

Although ADHD is a heavily researched childhood disorder, there is relatively little information available on its effects in the school setting (Reid, Vasa, Maag, & Wright, 1994), and even less is known about teachers' knowledge and the treatment of ADHD (Jerome, Washington,

Laine, & Segal, 1999). Of the relatively small number of school-based studies, most have focused upon the effectiveness of teacher observations for the identification of ADHD (Atkins, Pelham, & Licht, 1989; DuPaul & Stoner, 1994).

However, in Zambia, a research conducted by Tembo (2014) to determine the prevalence rate in Lusaka urban government schools in Emmasdale zone indicated that 74.3% of the pupils had signs and symptoms suggestive of hyperactivity, inattentiveness and impulsiveness (ADHD). Since there were 55 children out of 600 who had suggestive symptoms of ADHD, the prevalence, which is the proportion of a population that has the condition at a specific point in time in the general population is 55/600 which is 9.1% prevalence rate.

Due to the gap that is identified above, and that there seem to be no study that was conducted in rural Zambia, the researcher sought to assess the knowledge, of teachers about ADHD and the prevalence rate of ADHD which is not known particularly in Pemba District of Southern Province of Zambia.

1.3.1 General Objectives.

To assess the knowledge of teachers about ADHD and its prevalence rate in primary schools in Pemba District.

1.3.2 Specific Objectives

- I. To assess teacher's knowledge about ADHD in primary schools of Pemba District.
- II. To ascertain challenges experienced by teachers in instructing learners with ADHD in Pemba District.
- III. To determine the prevalence rate of learners that showed symptoms of ADHD Pemba District.

1.4 Research Questions

- I. To what extent do teachers know about ADHD in primary schools of Pemba District?
- II. What challenges are teacher's experiencing in instructing learners with ADHD in Pemba district?
- III. What is the prevalence rate of learners that showed symptoms of ADHD Pemba district?

1.5 Significance of the study.

The findings of this study are extremely important as they would generate information on factors and prevalence of ADHD which currently unknown in Zambia. Apart from that, the information obtained is of great importance especially policy makers on issues of ADHD in the country as it gives them an in-depth understanding of ADHD learners.

Besides that, the study is vitally important as it a precursor to the understanding of pupil's behaviour, performance and treatment in classroom situation. In way this helps lecturers particularly teacher trainees and in high institutions of learning have a foreknowledge college on pupil's behaviour in schools.

1.6 Limitations of the Study

It is worthwhile indicating that a study of this magnitude does not go without limitations. To start with, the study used simple random sampling in selection of schools and other participants whose standpoint could not only be subjective but also the selection criteria used could have been bias. Above all, the identification process of ADHD checklist used is not free from interviewer flaws, geocentricism and biasness.

Henceforth, generalisation of the findings must be done with caution to other schools in the area that have similar characteristics with schools in Pemba district

CHAPTER TWO

LITERATURE REVIEW

2.0 Factors Associated to ADHD

There are a number of factors believed to have been the causes of ADHD, a number of research were conducted to ascertain the factors that are associated to the condition. In this section of literature, a number of views highlight the causes of ADHD ranging from genetic to environmental. A number of scholars and expert have found diverse factors associated to ADHD. They also came with of approaches such as: the heritability approach, the neurological approach, the cognitive approach and the environmental approach. Each of these approaches has its own strengths and weaknesses regarding their explanation of the disorder, from which methods of assessment and intervention are derived. However, these approaches do not necessarily contradict one another.

Barkley (2004) found that ADHD symptoms for the most part appear in the early stages in life, and in most cases, they continue to appear throughout life. He further maintained that the development of the symptoms of ADHD, which appear already in the early stages in life, is influenced by the attachment figure which constitutes a most significant factor in the child's development. Be that as it may, Brieber et al. (2007) posit that the abnormalities in this area could explain the main symptoms of ADHD that are manifested by inattention and hyperactivity impulsivity. Preliminary studies have shown that the brains of children with AD/HD "mature in a normal pattern but are delayed three years on some regions on average when compared to youth without this disorder" (NIMH, 2007.). This clearly shows that ADHD can also be attributed to brain disorder which usually occurs during early stages of brain Development. Proponents of this school of

thought seem to agree on the fact that children who exhibit AD/HD have a smaller brain size, structure and other related abnormalities. Their studies have also shown differences within the fronto-striatal circuits of children with AD/HD as compared to children without AD/HD.

In another study conducted in Africa it was revealed that children having a positive family history of psychiatric and medical illnesses had 3.6 and 2.85 folds increased chance to get ADHD (Farahat et al., 2014). The current opinion is that ADHD is a mixture of genetics and environmental factors (Burns et al., 2017). A similar study found males had a higher prevalence of ADHD than females (3.5:1) and had about three folds increased chance of having ADHD. This was in concordance with several studies that showed a well-documented gender difference in the prevalence of ADHD(Osman et al., 2015).

. Similarly, individuals who have undergone traumatic brain injuries exhibit similar behaviors as children with ADHD. Bellmore, Ellison-Wright, & Ellison-Wright (2008) also concluded that children who have experiences traumatic brain injuries develop AD/HD- like symptoms that were not apparent before. The appearances of AD/HD-like symptoms seem to be dependent upon the location in the brain and the severity of the injury.

Furthermore, some experts contest that cognitive representations of the infant-child and his human environment are created on the basis of early attachment experiences (Joshi and Angolkar, 2018). As such the system of attachment in early cognitive development is also a major factor in processes of behavioural regulation in general and regulation of emotions in particular. As a consequence, deficiency in the ability to regulate attention, emotions, and behaviour is the basis for the neuropsychological mechanism that enables

ADHD. Therefore, mental disorders may harm the proper development. A contemporary research by (Farahat et al., 2014). Indicated that 91% of the children with insecure attachment and only 22% of the children with secure attachment presented similar symptoms to those of ADHD.

The other factor that is believed to a cause ADHD is about the size of the family. For instance, growing up in large families of more than four. This had about one and half folds increased chance to get ADHD (Farahat et al., 2014) which was in accordance with a study which reported that, the larger the family size, the higher the prevalence of ADHD (Jaisoorya et al., 2016). The other studies have also shown that large family size accounts for various psychological problems. Thus, it is one of the contributing factors to ADHD due to impact on interpersonal relationships between family members (Skounti et al., 2010). It must also be borne in mind that the family's communicative culture and social factors play a significant role in the formation of interpersonal and intrapersonal relations.

On the other hand, another study showed that both ante-natal illness and drugs had about one and half folds increased risk for ADHD (Jaisoorya et al., 2016). A further study argues that maternal drug abuse and cigarette smoking during pregnancy may lead to the development of ADHD in children. Chronic exposure to smoking in pregnancy has been extensively studied where an evidence of a dose-response relationship between the numbers of cigarettes smoked and ADHD severity was confirmed. Consequently, exposure to carbon monoxide or altered placental function could account for development of ADHD (AlZaben et al., 2018). Over and above other studies have also shown that parental occupation and education level affect the prevalence of ADHD (AlZaben et al., 2018, Osman et al., 2015).

An unemployed mother is protective of having a child with ADHD whereas the unskilled paternal occupation and low educational levels of mother and father are not risk factors for ADHD (Farahat et al., 2014). Hjern et al., (2010) delineated that limited maternal education, single-parent families, and reduced family welfare were associated to ADHD condition in children.

However, a debate exists as to whether Attention Deficit Hyperactivity Disorder (ADHD) is culturally constructed and if it is prevalent in Africa (Bird, 2002; Faraone, Sergeant, Gillberg, Biederman 2003; Timimi and Taylor, 2004; Rappley, 2005). The opinion that geographical location may have some influence on epidemiology of ADHD and Attention Deficit Hyperactivity.

In addition, the brain's need for adequate nutrition is demonstrated by the effects of malnourishment on the developing brain, including reduced DNA synthesis, cell division, myelination, glial cell proliferation and dendritic branching (Sinn, 2008). Therefore, diet and nutrition can also be considered as influential determinants of ADHD development. This theory poses that the lack of nutrition to the brain leads to AD/HD symptoms being exhibited in its host. Sinn maintains that two areas of nutrition correlate with the development of AD/HD. The areas are the lack of the consumption of zinc and magnesium. He also discovered that after looking at various parts of the world of areas that consisted of children who exhibited AD/HD had lower levels of zinc. Sinn in his study concluded that low levels of zinc correlated with how severe the ADHD symptoms were in relation to behavioural and emotional symptoms.

All in all, there has been a number of factors that are associated to the cause of ADHD as cited from various researchers and these included the

following; family size, sex, age, drug abuse by mother during pregnancy, geographical location and maternal health however, despite having a lot of information about factors associated with ADHD very little is known about teachers' knowledge and its prevalence rate about the condition in most schools.

2.1 ADHD in the Classroom

Many of the behaviours that are associated with AD/HD are observed in and out of the classroom. Children with AD/HD might display these types of behaviours in and out of the classroom: a hard time paying attention, day dream a lot, not seem to listen, be easily distracted from schoolwork or play, forget things, be in constant motion or unable to stay seated, squirm or fidget, talk too much, not be able to play quietly, act or speak without thinking, having trouble taking turns, and interrupting others are some of the common characteristics that are being displayed in a classroom situation.

Children with AD/HD may have difficulties concentrating on school work, frequently interrupt conversations or activities, and have difficulty remaining seated when requested to do so. Though, it is typical for children at certain ages to exhibit these types of behaviours, most children will usually outgrow them.

In terms of Academic Performance, children who exhibit AD/HD tend to under achieve academically. They are less engaged academically and exhibit higher rates of off-task behaviour especially in independent work time. These students frequently do not achieve to their academic potential, as a result are at a higher risk for grade retention and dropping out of school. They are also less likely to pursue post-secondary education. According to Abikoff et al (2002) (as cited in Hay, D., Kos, 1., & Richdale, A. (2006))

"While boys with AD/HD show significant behavioural problems in the classroom, girls with the disorder are more likely to have predominately inattentive symptoms and are little more disruptive than typically developing children" (p. 148).

Furthermore, DuPaul & Stoner, (2003) also indicated that highly correlated with AD/HD are academic underachievement because of high rates of non-compliance, aggression, and disturbances in peer relationships

AD/HD Students & Social Difficulties. Students' who exhibit AD/HD often times have other difficulties in the school environment in addition to their academic struggles. These students have a hard time making and maintaining friends. "Some studies have suggested that children diagnosed with AD/HD are more likely to be rejected by peers than children with other disruptive behaviour disorders" (Feinberg & Frankel, 2002). A study conducted by (Hosa 2005) indicated that "children with AD/HD were nominated as non-friends by children of higher social preference and who were better liked by others". These difficulties are related to the problems with impulse control and inattention. Therefore, it is important for teachers to identify those learners suspected to have ADHD so that possible interventions are made before the situation goes out of hand. Every learner is educable despite of the disability, therefore it the duty of the teacher to embrace all leaners in class despite of their disability. Teachers are encouraged to undertake a lot of class-based research so as to bridge a gap between learners with special needs and the abled ones. It is for this reason why the researcher decided to take research to determine the knowledge and experiences of learners in primary schools of Pemba district since very little is known about the knowledge and experience of teachers about ADHD in Pemba District.

Despite teachers have a vital role in the recognition and management of ADHD, the present study revealed that the average percentage of ADHD knowledge among them was only 38%. In a similar study carried out in Makkah (Saudi Arabia), the overall percentage of correct answers regarding ADHD among elementary and kindergarten teachers was 58.9%. Very low percentage of overall score of correct answers (17.2%) has been reported in another study carried out in Riyadh, Saudi Arabia.

2.2 Diagnostic Criteria and Methods.

The diagnostic criteria for ADHD, consist of a persistent pattern of inattention and /or hyperactivity-impulsivity that interferes with functioning or development, as characterized by the criteria for inattention and/or hyperactivity-impulsivity The Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition Text Revised (DSM-IV TR) (2000), is used to the following symptoms. Similar Characteristics were also obtained from APA 2013 on Inattention and Hyperactivity-Impulsivity respectively and these are;

Inattention type, these includes; Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or during other activities, Often has difficulty sustaining attention in tasks or play activities, Often does not seem to listen when spoken to directly, Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace, Often has difficulty organizing task and activities, Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental efforts, Often loses things necessary for tasks or activities, Is often easily distracted by extraneous stimuli and are often forgetful in daily activities.

Hyperactive-impulsive type, the symptoms include; Often fidgets with or taps hands or feet or squirms in seat, often leaves seat in situations when remaining seated is expected, often runs about or climbs in situations where it is inappropriate, often unable to play or engage in leisure activities quietly, are often “on the go,” acting as if “driven by a motor.”, often talks excessively, often blurts out an answer before a question has been completed, often has difficulty waiting his or her turn, often interrupts or intrudes on others, Symptoms for both types must occur for at least a six-month period, be a typical for developmental stages, and have a negative impact on social interactions and academic.

2.3 Prevalence rate at Global level

The worldwide prevalence of ADHD among school children is on an average of 5–7%. ADHD (AlZaben et al., 2018). However Royal College of Psychiatrists [RCP], 2016) recorded the global prevalence of ADHD is cited as 5.3% (Polanczyk et al., 2007), whilst estimates in the UK range between 3 - 9% (NICE, 2009) and 2 -5%. This may in part be owing to differential definitions, e.g. prevalence of around 5% according to DSM 5 criteria, and 1.5% according to the more stringent ICD 10 criteria (O’Regan, 2007).

A meta-analysis of 175 research studies worldwide on ADHD prevalence in children aged 18 and under found an overall pooled estimate of 7.2% (Thomas et al. 2015). The US Census Bureau estimates 1,795,734,009 people were aged 5-19 worldwide in 2013. Thus, 7.2% of this total population is 129 million—a rough estimate of the number of children worldwide who have ADHD.

Based on DSM-IV screening of 11,422 adults for ADHD in 10 countries in the Americas, Europe and the Middle East, the estimates of worldwide

adult ADHD prevalence averaged 3.4% (Fayyad et al. 2007)

Large-scale population studies of school-aged children indicate that prevalence rates of ADHD are likely to be in the order of 3 to 5% (Barkley, 1990; Cantwell, 1996). These studies also suggest that boys are more likely to exhibit the disorder than girls at levels of approximately 3 to 1 (Barkley, 1997). Other widely quoted estimates include 9 to 1 in clinical samples, and 4 to 1 in epidemiological samples (American Psychiatric Association, 1994; Barkley, 1990). However, such estimates may be highly conservative in light of recent subtype and gender comparison research (Wolraich, Hannah, Pinnock, Baumgaertel, & Brown, 1996).

With regard to prevalence, researchers have speculated that with the newly identified ADHD subtypes (Predominately Hyperactive-Impulsive, Predominantly Inattentive, and Combined) the percentage of individuals affected by this disorder may be higher than previously reported (Wolraich et al., 1996). Gender-comparison research by Brown, Madan-Swain, & Baldwin (as cited in Zametkin, 1995) has also highlighted deficiencies in the identification of ADHD. This research revealed that male to female ratio figures of ADHD may not be entirely representative due to the under-identification of females in the school-aged population. An explanation for the under-identification of females with ADHD was provided by Wolraich et al.

Teachers and ADHD (1996). While females may have primarily inattentive and cognitive problems, they usually demonstrate less hyperactivity, and impulsivity than their male counterparts. Irrespective of gender, it is estimated that as many as 50% of children with

ADHD are never diagnosed (Amaya-Jackson, Mesco, McGough, & Cantwell, 1992; Elia, Stoff, & Coccaro, 1992).

2.3.1 Prevalence rate in India

Research on ADHD in India is in its nascent stage and initial studies indicate that prevalence rates for ADHD vary from 5-10 percent of the general population (Malhi and Singhi, 2000).

The incidence is reported to be higher in boys than girls in the ratio of 7:4, Most Studies conducted have been mostly based on clinic presentations of ADHD and are epidemiological in nature. Problems in school performance as opposed to specific symptoms of ADHD are common reasons for referral to child development centres and clinics (Karande et al., 2007; Wilcox, Washburn & Patel, 2007). Clinic presentations of ADHD reflect a higher level of severity. There is an absence of Indian research studies available on children who may be experiencing sub-clinical or mild levels of ADHD. These children are challenged in classroom settings yet are unlikely to receive any formal or consistent intervention.

Karande et al., (2007) studied children with ADHD and Specific Learning Disability in Mumbai. The study observed that the average age at which children were identified was 11 to 36 years. There was a gap of 5.8 years between noticing learning and behavioural difficulties. This delay could be attributed to the observation that teachers and parents in India often take a maturational perspective especially with boys who display behavioural difficulties.

A qualitative study by Wilcox et al., (2007) cited in (international journal of special education vol 28, no: 2, 2013.) aimed at analysing the explanatory models employed by parents whose children have an ADHD diagnosis. It also addressed the relevance of the ADHD diagnostic construct in the Indian setting. The key findings indicated that the majority of referrals were related to problems in academic performance. Parents

recognized that their child had difficulties but did not primarily consult with doctors. Most attributed their child's difficulties to learning and memory difficulties, models which emphasized either volitional or non-volitional nature of the condition or blamed themselves or their spouse. Most parents rejected the biomedical model that they were introduced to at the time of the diagnosis being conveyed to them. The study supported the hypothesis that a biomedical psychiatric label may not be an acceptable strategy for meeting mental health needs in Indian culture (Patel & Prince, 2001; Rodrigues, Patel, Jaswal & De Souza, 2003).

Findings about ADHD in the Indian context appear to share certain similarities with Western research literature on the subject. Sayal, Goodman and Ford, (2006) reported that a majority of parents in the UK discuss their concerns with professionals based in education services and stressed on the need to support teachers in their contact with parents. Another UK based study concluded that schools appeared to be under-resourced in coping with ADHD-type behaviours as teachers possessed limited knowledge about the diagnosis and behavioural/educational methods of treatment (Sayal, Hornsey, Warren, MacDiarmid & Taylor, 2006).

2.3.2 Prevalence rate in Columbia.

Firstly, a research conducted in Colombia, showed the prevalence rates of 19.8% and 12.3% for boys and girls respectively (Pineda, Lopera, and Palacio, 2001). Such a wide range in prevalence estimates is unlikely to reflect true differences in the numbers of individuals with ADHD in various populations.

In addition, Polanczyk and colleagues (2007) made a systematic review of prevalence studies and concluded that the great majority of variability derived from the methods used, such as the way

symptoms were measured and the exact definitions used. There were relatively minor differences in different parts of the world and the review's summary of rates was around 5.3%. Despite the high visibility that ADHD receives in the US media, research studies on ADHD indicate that while teachers are knowledgeable about the typical characteristics of ADHD, they were far less certain about causes, treatment and long-term prognosis (Sciutto, Terjesen and Frank, 2000). Low levels of teacher awareness find resonance in Holst's (2007) as cited in the international journal of special education vol 28, no: 2, 2013. Qualitative study on early childhood teachers in Denmark. The study focused on how teachers experience and manage challenging behaviour and ADHD. (International journal of special education vol 28, no: 2, 2013.)

There are a number of researches that were conducted to ascertain the prevalence of ADHD, more research was conducted in Europe and United states of America but very little were done in Africa especially in Zambia.

2. 4 Prevalence rates in African

It is worth noting that the research in Africa on ADHD is scanty with little evidence of research cites studies in South Africa, Congo D.R, Nigeria and Kenya only. There is little empirical evidence relating to ADHD prevalence in Zambia. The prevalence of ADHD among school children according to studies conducted in Africa ranges between 5.4% and 8.7% (Eilertsen, Sundet, Tshifularo, Sagvolden., 2004; Kashala, Tylleskar, Elgen, Kayembe, and Sommerfelt, 2005; Adewuya and Famuyiwa, 2007) cited in (Tembo 2014).The studies coming from South Africa documented a prevalence of about five percent, which concurred with the finding of a prevalence of about five percent in the meta-analysis study of world-wide prevalence of ADHD by Polanczyk, De Lima, Horta, Biederman and Rhode (2007).

The only epidemiological study among school children coming from the Democratic Republic of Congo documented a prevalence of 6.0%, while the only epidemiological study coming from Nigeria among school children revealed a prevalence of 8.7%.

The prevalence of ADHD is rare in the published literature in Nigeria. And ADHD prevalence seems to vary in different settings, such as in the general population versus in hospitals or in schools. Not much is known about ADHD prevalence in hospitalized Nigerian children. And there are few documented findings about the prevalence of ADHD in the outpatient setting. In other African countries, such as South Africa, Democratic Republic of Congo, or Ethiopia, the prevalence of ADHD has been reported to vary from 5.4% to 8.7% among school children. However, in the general population, ADHD has been reported in 1.5% of children. And children with possible organic brain pathology have been reported to have a prevalence of ADHD of 45.5–100%. The few Nigerian studies that have been published report a prevalence of ADHD of 7.6%.

The prevalence of ADHD reported on other continents is variable. For instance, prevalence of ADHD in Saudi Arabian primary schools is reported to be as low as 2.7%, while that in Iran is reported to be as high as 13% with a predominance of the hyperactive-impulsive type.

2. 5 Prevalence rates in Zambian

In relation to prevalence rate in Zambia, a research conducted by Tembo (2014) in Lusaka urban government schools in Emmasdale zone indicated that 74.3% of the pupils had signs and symptoms suggestive of hyperactivity, inattentiveness and impulsiveness (ADHD). Since there were 55 children out of 600 who had suggestive symptoms of ADHD, the prevalence, which is the proportion of a population that has the condition at a specific

point in time in the general population is 55/600 which is 9.1% prevalence rate (Tembo, 2014)

2.6 Comparative Studies

A study conducted in Zambia by Tembo (2014) indicated that children 9.1% is not in accordance with the reported prevalence among school age children from other parts of the world, it can safely be deduced that in terms of prevalence, it is rather higher (9.1%) in this cross-section study. This study is almost consistent with a Nigerian study by Egbochuku and Abikwi, (2007) in which the prevalence of ADHD was 8.7%. Contrary to this study, one study in Ethiopia reported a prevalence of 1.5% (Ashenafi, 2000). Gadow, Sprafkin, Carlson, Schneider, Nolan, Mattison, Rundberg-rivera., (2000) reported on the prevalence of ADHD symptoms in a sample of 600 Ukrainian children and an age-matched sample of 443 US children.

The study in Zambia reported a very low prevalence of ADHD symptoms 9% compared with the Ukrainian study, which was 19.8%. However, in the US sample, the prevalence was 9.7%. It is unclear why the prevalence of ADHD symptoms should be so much higher in the sample of Ukrainian. It is possible for instance to argue that the higher Ukrainian prevalence reflects the environmental adversity and psychosocial dislocation associated with the Chernobyl disaster, but we can draw no firm conclusions in the absence of an appropriate Ukrainian control group. (Tembo Abel 2014)

The variation in the methods that are used to determine prevalence rates highlights the difficulties in making direct comparisons between. This is further compounded by the fact that ADHD symptoms are continuously distributed throughout the population with no natural threshold between affected and unaffected individuals (Taylor, Sandberg, Thorley and Giles., 1991).

This particular problem can be successfully resolved by the application of strictly applied operational diagnostic criteria such as the DSM-IV-TR definition for ADHD or the research ICD-10 criteria for hyperkinetic disorder. However, even where the same diagnostic definitions are applied, there may still be differences in the thresholds applied for individual symptoms, which are rarely operationalised. For example, how severe should be avoidance of tasks requiring sustained attention or levels of fidgetiness before they are considered to be clinically significant?

In the UK, a survey in Newcastle found that prevalence was 11% for the syndrome with no impairment, 6.7% when associated with moderately low impairment, 4.2% for moderate impairment and 1.4% for severe pervasive impairment (McArdle et al., 2002).

Taking into account the differences in investigator training and measures used across studies it is not possible to draw firm conclusions from the large variation in prevalence rates cited in the literature. Having said that, small differences are likely to exist. One study from the US using the same diagnostic procedures reported small but significant differences in prevalence rates between African-Americans (5.65%), Hispanics (3.06%) and whites (4.33%) (Cuffe, Moore, Mckeown, 2005); such differences might, however, be explained by different cultural tolerances for the symptoms of ADHD.

While the prevalence in our setting shows the value to be high, it is critical to contrast it with other studies with low rates. Iceland, Australia, Italy, and Sweden have been reported to have low rates, but this cannot be concluded based on the available data in the Zambian setting. The sample was only a sub locality in the City of Lusaka. However, direct comparisons between the aforementioned and other populations are required

to truly assess the relative prevalence of ADHD symptoms in different cultures, Districts Provinces and countries at national level.

More studies need to be conducted in Zambia to ascertain the prevalence rate, nevertheless the researcher feels that the experience and knowledge of teachers also needs to be assessed in schools and it is for this reason why the research had to be conducted in Pemba district southern province

A critical analysis on the studies on ADHD showed the prevalence ranging from 5% to 19% being the highest. Furthermore, my observation showed that most of the study were done in urban areas and less in the rural areas. Not only that, studies also indicated that ADHD seem to be an emerging issue that requires specific attention rather than generalisation.

In that regard, more research and sensitisation need to be done in Zambia so that especially in the rural areas so that results would be compared to that which was done in urban areas as well as to the rest of the world. It is for this reason that I feel research should be conducted in Pemba district a rural part of Zambia to compare the prevalence with the research done in Lusaka urban and to bring out views on the knowledge and experience of teachers about ADHD in primary schools of Pemba District Southern Province.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Research Design.

Kombo and Tromp (2013) described a research design as a plan on how a study would be carried out or a detailed outline of how a research would take place. Achola and Bless (2009) also defined it as the planning of any scientific research from the first to the last step. It is a specification of the most adequate operations to be performed in order to test specific hypothesis under given conditions.

The study was Case Study because it was flexible adaptable and allowed the researcher to come up with a solution that helped the researcher to come up to foreseeable problem beforehand. According to Yin (2014) Case Studies are detailed investigations of individuals, groups, institutions or other social units. A case study has one person, entity, a study of one thing; it is identified as one of the many. It may be of one person, class, district, country, continent or a family. Additionally, a case study design was employed because it allows a researcher to have an in-depth and detailed understanding of a single unit, such as one individual, one group, one organization, or one program.

Further, the study also used both qualitative and quantitative techniques. Creswell, (2014) noted that the qualitative approach enables the researcher to have a complete understanding of the phenomena by digging deeper and going beyond the surface, to examine from all angles, the collected data to come up with a very clear picture. Therefore, study will further use a mixed method approach due to its nature. The mixed method approach combines both the qualitative and quantitative research paradigms. The use of two methodologies was adopted in order to enhance

research findings by providing a well-rounded understanding of the experience and knowledge of teachers about ADHD and its prevalence in primary schools of Pemba district in Zambia.

Although both methodologies were employed in this study, qualitative approach was used more than the quantitative approach in this study. The Qualitative approach was used more than the other because the aim of this study was to gain a deeper understanding of the knowledge and experiences about ADHD amongst primary school teachers in Pemba district. The qualitative methods were also used more because it allowed the researcher to freely interact with the participants and listened to their voices in a manner that lead to a clear understanding of teaches, and school managers' perception towards the topic at hand.

3.1 Target Population

In relation to target population, Polit and Hungler (1999) defined a study population as the totality of all subjects that conform to a set of specifications, comprising the entire group of persons that is of interest to the researcher and to whom the research results can be generalised. In other words, a study population with regards to this research included pupils and Teachers from primary grades from the selected primary schools of Pemba District.

3.2 Sample Size

Kothari (2011) explains that, a sample size refers to the number of items to be selected from the universe, a sample is a subset of the population. As a consequence, the sample size of the study was 100, comprising of 50 pupils 50 teachers that were selected randomly in the 5 primary schools in Pemba District of southern province.

3.3 Sampling Procedure

Ng'andu (2014) extrapolated that the term sampling is a precise course of action or procedure

that can be followed when selecting a portion or segment that is representative of a whole.

Simple random method was used to select Five 5 primary schools in Pemba district and also to select primary school teachers for the research after which a checklist will be administered to ascertain the manifestation of ADHD characteristics.

3.4 Data Collection Method

Questionnaires were used to get information about experiences and knowledge of teachers about ADHD. Brown (2009) wittily pointed out that a questionnaire as is any written instrument that presents respondents with a series of questions or statement to which they are to react either by writing out their answers or selecting from among existing answers.

The justification for using questionnaires is that they are cheap, do not require as much effort from the questioner as verbal or telephone surveys and often have standardized answers that make it simple to compile data.

For objective 4 a checklist was used to get information from pupils by the teachers about ADHD. Checklist was answered by the teacher on manifestation of ADHD behaviour of the pupil in class to determine whether the pupils showed signs of ADHD or not.

Thereafter, the data was then entered into Microsoft Excel and later exported to Stata Version 13 software for cleaning, interpretation and analysis.

3.5 Procedure for Data Collection

On the subject of data collection, Bloomberg and Volpe (2008) points out that, data collection section in research is the part that describes and justifies all data collection methods, tools,

instruments, and procedures, including how, when, where, and by whom data were collected.

As a result, the study involved 50 questionnaires that were distributed to 50 teachers from 5 different selected primary schools of Pemba district to ascertain the views of teachers on knowledge and experiences of ADHD, From the same 50 teachers 10 teachers were be given 10 checklist each to be administered to 10 learners in class each class to ascertain the prevalence rate.

3.6 Data Analysis Techniques

From the onset it must be borne in mind that data analysis involves breaking down complex factors into simpler ones and parting the parts together in new arrangement for the purpose of interpretation. Similarly, Singh (2009) opines and agrees that data analysis as a process of studying the tabulated materials so as to determine inherent or meaning. Since the study followed mixed methods approach, both qualitative and quantitative methods were employed to analyse data. For qualitative part, data was analysed thematically as follows; responses to open ended questions (qualitative data) were recorded and then grouped into categories or themes that emerged and these were interpreted in line with the research objectives. This qualitative analysis gives a detailed account of what the interviewees actually may say.

Furthermore, the data was then reduced to its essence and representative and most striking quotes were identified. Codes related to the objectives were identified and a thematic analysis was done. Throughout this process of categorising pattern, similarities and contrasting viewpoints were highlighted and critically interpreted on the basis of the theoretical framework. The data was further analysed using Excel software.

3.7 Ethical Consideration

In reality and in principle, an ethical approval to conduct a study was obtained from the relevant authorities. Furthermore, permission to conduct a research in schools was obtained from the Ministry of General Education DEBS Office of Pemba District. Luckily, consent was obtained before distributing questionnaires to all the teachers. Consent, was also obtained from the pupils chosen to be included in the study.

More to that the data collection instruments were translated into a local language for easy understanding of the participants especially learners. Information collected was kept under a password protected computer to ensure privacy. De-identification of participants was done to ensure confidentiality and data collected was used strictly for the rese

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

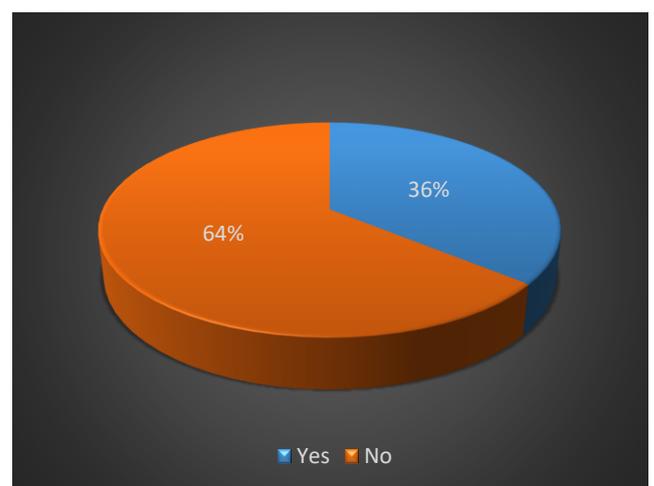
The results are presented in line with the four objectives set out in Chapter One of this study which are to:

- I. To assess teacher's knowledge about ADHD in primary schools of Pemba District.
- II. To ascertain challenges experienced by teachers in instructing learners with ADHD in Pemba District.
- III. To determine the prevalence rate of learners that showed symptoms of ADHD Pemba District.

4.1 Teachers' Knowledge about ADHD in primary schools

One of the key objectives of the study was to assess Primary School teachers' knowledge about ADHD. This objective was guided by the research question: *what is the teachers' knowledge about ADHD in primary schools?* The following chart gives the statistics of the findings as recorded from the participants

Figure 4.1.1 Response on teacher's knowledge.



The Chart above shows a statistical distribution of Teachers who took part in the study in the quest to finding out their knowledge about ADHD. It was

revealed that 18 out of 50, representing 36% of the total number of Teachers said they had knowledge about ADHD while 32 out of 50 Teachers representing 64% said they had no knowledge about ADHD.

From the study, it showed that special education in colleges is not learnt in details and some collages do not offer compulsory courses to all the students in special education for the teachers to be able to identify learners with disabilities including those with ADHD. Some teachers cited that they have little knowledge about ADHD because they never learnt special education at collage. Some teacher indicated that the Zambian curriculum has not been adapted for students with special needs especially those with ADHD. The following detail shows the statistics of teachers that did special education in collages.

4.1.2 Proportion of Teachers Who did Special Education

In a quest to find more about knowledge about ADHD from teachers, teachers were asked if at all they studied special education as one of the educational courses at collage. From the 50 teachers that took part in the research 30 representing 60% studied special education as one of the educational courses while 20 of them representing 40% did not study special education. One teacher that took part in the study responded that;

I did not study special education at college, our collage never offered Special education.

Another teacher from another school lamented that;

- *Special education was not a stand-alone course instead it was combined*
- *With psychology so we never learnt much to enable me to be able to*
- *Identify learners with ADHD. I can only manage to identify learners*

- *With sight problem.*

Another Teacher asserted that

- *I know about ADHD it follows under learners with special needs. With regards to identification, yes, I know such children as they are usually fugitive in class and see to lose interest in the lesson so easily.*

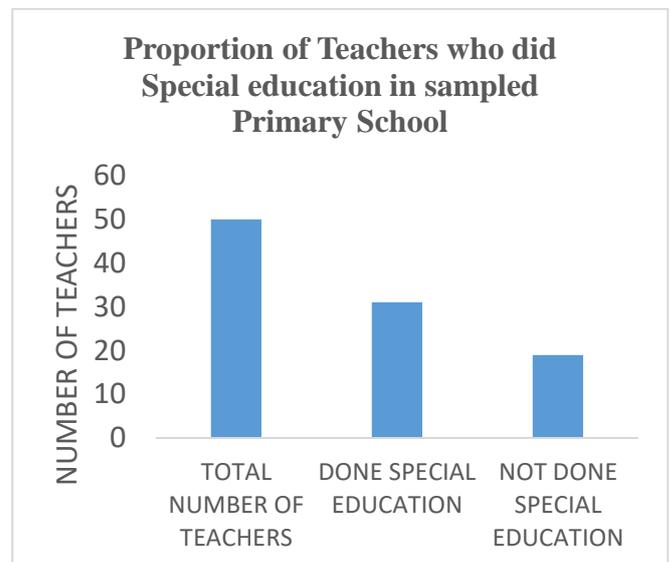
Researcher what assistance to give such learners.

- *In reaction the respondent, said that; "I don't really know what I should do to such learners."*

While a named teacher said that

- *"You mean ADHD learners I never did".*

Figure 4.1.3. Proportion of teachers who did special education.

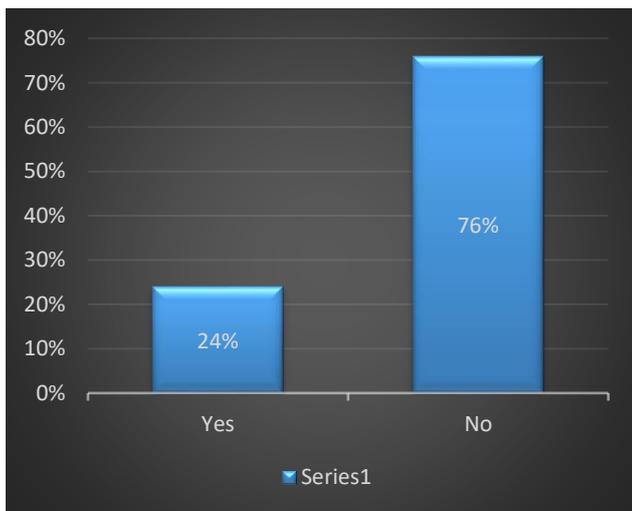


Even if the majority of teachers did special education many responses indicated that special education was not learnt in details as most of the teacher had scanty knowledge in special education. Some teachers indicated that the Zambian curriculum was not adopted for successful inclusion of learners with special education and the following were the responses concerning the same.

4.1.4 Teachers Experiences in teaching pupils with ADHD

On the quest to find out more about teacher's knowledge about ADHD, it was also discovered that even if few teachers indicated that had knowledge about ADHD very few had experiences in handling such learners. On that aspect, the findings revealed that 38 teachers out of 50 representing 76% said they had no experience while 12 teachers out of 50 representing 24% said they had experience in teaching children with ADHD. This information however, is summarised in chart below.

Figure 4.1.5 Teachers experience in handling pupils With ADHD



In response to the experience of teaching learners with ADHD one teacher lamented that?

I am unable to identify learners with ADHD hence I may not be in A position to give a desired remedy.

The other one said that;

I don't have experience at all in handling learners with ADHD Actually I have never heard about that disability.

The other one said that;

I am able to identify learners with ADHD but I'm not trained on How to handle them in a class so I have no experience at all.

The eight teachers implicitly indicated;

The first one: *I am trained teacher and a registered staff with the Teaching Council of Zambia. Regarding the question on my experience on ADHD learners, let me say that I read briefly about such learners in psychology of education particularly on learners with special needs. I was deployed in 2009, since then I have been seeing children who exhibit social disorder. But to be honest I have not done anything to help them in their academics nor have I taken any further remedy because I don't know what should be done.*

The second one: *let me begin by saying that I'm glad that you have asked such questions. Though I am aware that such learner is there, I have not taken any interest in exploring more about them and how they should be treated or handled especially in a classroom situation. Inasmuch as the subject falls under psychology and I briefly learnt it at college. I should say right from the onset that I considered the course to be absurd, difficult and without any significance. I only crammed in order to clear the course. How I wish this topic this topic received the same attention as other components of special education.*

Third one: *I will be very brief and truthful. I don't know much about it and I have literally no experience in it. I don't intend to waste time sir, thank you.*

While the fourth explicated that: *I have experience on how to handle ADHD learners but the teaching / learning environment was not supportive and conducive materially, and socially.*

The fifth: *I am well breast with ADHD learners but a successful practical toward identification and handling of such learners was still a nightmare in the District due to administrative, and infrastructure and structural reasons.*

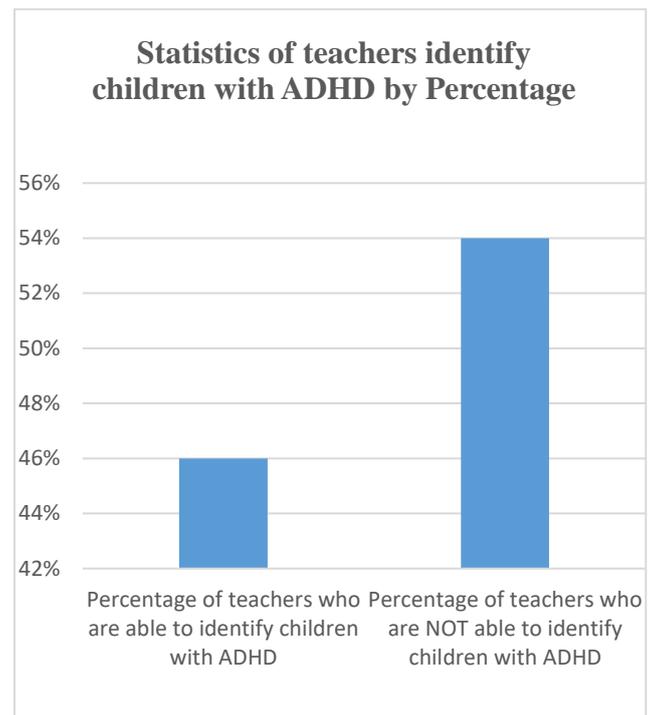
The six: *I have no idea nor experience of ADHD. In short, I am unable to identify them and give them relevant assistance in a classroom situation.*

The seventh teacher: *ADHD pupils always run up and down disturbing other learners; hence, they school be enrolled in schools that consider learners with special needs as is the case with other forms of disability like the visually impaired and the hearing impaired.*

The eighth teacher: *ADHD pupils lack of concentration which causes poor performance. As result, I try my best find strategies to make them regain their interest in the lesson at every stage in the lesson.*

4.1.6 Statistics of Teachers who are able to identify Learners with ADHD.

Teachers who are able to identify children with ADHD	Teachers who are NOT able to identify children with ADHD	Total
23	27	50



The table above summarises on the knowledge of teachers about ADHD where it clearly indicated that apart from just knowledge some teachers were unable to identify children with ADHD that indicates 27 out of 50 respondents indicating 54% from the total sample. Only 23 representing 46% were able to identify the children with ADHD.

4.2 The challenges faced by teachers in teaching pupils with ADHD in primary schools

The third objective of the study was the challenges faced by teachers when teaching pupils with ADHD in primary schools, and the data collected from the participants revealed the following facts as challenges: pupils always run up and down disturbing other learners, lack of concentration which causes poor performance, slow grasping of information due to inadequate concentration, pupils with ADHD over react in situations hence making a lesson difficult, they exhibit interruption and restless behaviour thereby making teaching and learning a challenge, they don't take learning seriously hence difficult to manage the class, pupils with ADHD are always trouble makers, they are noise makers, they are mostly slow in

completing tasks, lack of specialised teaching materials and pupils with ADHD are mostly stigmatised hence making them not to like school. The following table tabulates these challenges clearly.

Table 4. 2.1 Responses from teachers on the challenges faced in teaching pupils with ADHD in primary schools

Teachers	Responses
	<ul style="list-style-type: none"> -Pupils always run up and down disturbing other learners -Lack of concentration which causes poor performance -Slow grasping of information due to inadequate concentration -Pupils with ADHD over react in situations hence making a lesson difficult -They exhibit interruption and restless behaviour thereby making teaching and learning a challenge -They don't take learning seriously hence difficult to manage the class -Pupils with ADHD are always trouble makers -They are noise makers -They are mostly slow in completing tasks -Lack of specialised teaching materials -Pupils with ADHD are mostly stigmatised hence making them not to like school

4.3 The prevalence rate of pupils that showed symptoms of ADHD among pupils in primary schools.

The information collected from teachers in primary schools on the prevalence rate of pupils that showed signs of ADHD revealed that out of the total of 50 children sampled, 5 of them representing 10% were found to Show symptoms of ADHD Inattentive type while 2 representing 4% were found to have both symptoms of ADHD Inattentive and Hyperactive Impulsive type. None showed the symptoms ADHD Hyperactive impulsive type only. The prevalence rate of those that showed signs of ADHD in this study were 14% while children that showed no symptoms of ADHD were 43 representing 86%.

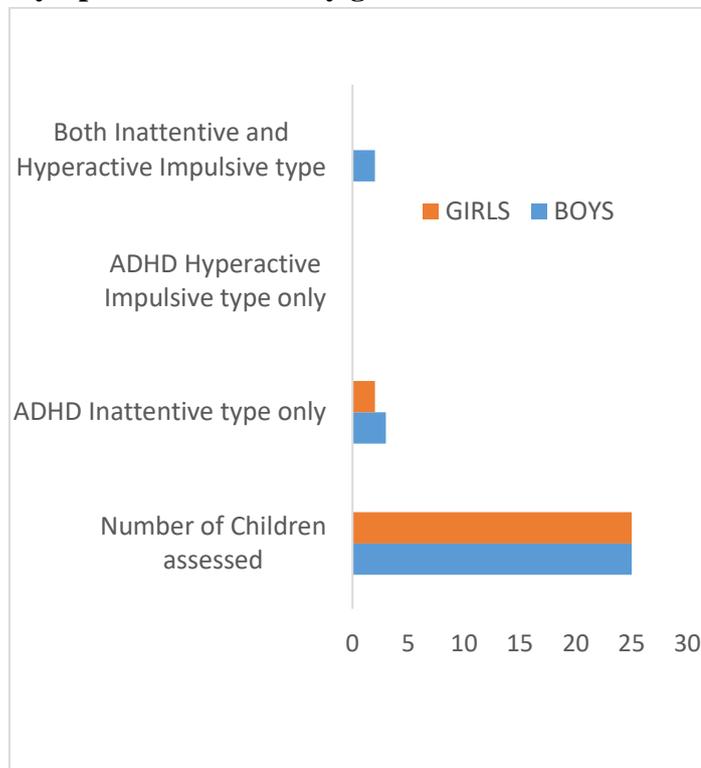
This information is as illustrated in the following table below:

Table 4.3.1 Prevalence rate

Category	Total number	%
Number of Children assessed	50	100
Number of Children that showed symptoms of ADHD Inattentive type only	5	10
Number of Children that showed symptoms of ADHD Hyperactive Impulsive type only	0	0
Number of Children that showed symptoms of both Inattentive and Hyperactive Impulsive type	2	4
Children without any symptom of ADHD	43	86

Figure 4.3.2 Prevalence rate of pupils that showed

Symptoms of ADHD by gender



The figure above shows the results as they were collected from teachers on the prevalence rates of ADHD in children by gender. It shows that out of 50 children, 25 were males while 25 were females and the number of children that showed symptoms of ADHD Inattentive type only were found to be more prevalent in males than in females. Out of 5 children who showed symptoms of ADHD Inattentive type only, 3 were males representing 6% while 2 were females representing 4%. In terms of those who showed symptoms of both types, it was also revealed that 2 were also males representing 4% while none were female. The two children that showed both symptoms of both types were all from the lower primary.

CHAPTER FIVE:

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.0 Overview

The previous chapter has presented the findings as they were collected from the respondents. In this chapter however, the research will discuss the findings as presented in chapter four. It will also present the conclusion and recommendations of the study based on the findings and discussions on the knowledge of teachers about ADHD and its prevalence rate in primary schools in Pemba District in southern province Zambia.

This will be done in line with the help of thematic headings from the research questions or objectives as indicated in chapter one above which includes to:

- i. Assess teacher's knowledge about ADHD in primary schools of Pemba District
- ii. Identify the challenges faced by teachers in teaching pupils with ADHD in primary schools in Pemba district
- iii. Determine the prevalence rate of learners that shows symptoms of ADHD among pupils in primary schools of Pemba district

5.1 Discussion.

5.1.1 Teachers' Knowledge about ADHD in Primary Schools

Following the finding presented in chapter four of this study, it is clear that most teachers do not have knowledge about the ADHD in primary schools. Most of them expressed ignorant to the objective by indicating that they knew nothing about it and thus, indicating a 'No' response on the questionnaires, 64% indicated having lack of knowledge. Therefore, it is important for the government through the ministry of education to

see to it that more teachers are trained in this area. Mostly, teachers who do not have knowledge will keep recording low pass rates. These findings are in line with those of Karande et al., 2007; Wilcox, Washburn & Patel, 2007 who indicated that most teachers who teach children in the lower grades tend not to have knowledge of the ADHD hence continue facing challenges resulting into poor results.

Miranda et al also asserted that, despite teachers have a vital role in the recognition and management of ADHD, the present study revealed that the average percentage of ADHD knowledge among them was only $38\% \pm 11.3\%$.

In a similar study carried out in Makkah (Saudi Arabia), the overall percentage of correct answers regarding knowledge about ADHD among elementary and kindergarten teachers was 58.9%, which is high above average which is also similar to the results obtained in this study.

However, results in this study is not in line with the studies in South Africa, where Kleynhans reported an average of 42.6% for correct answers regarding knowledge of ADHD among elementary school teachers this shows that teachers in south Africa are well knowledgeable about ADHD. In USA also, Sciutto *et al*, reported an average of 47.8% for correct answers among primary school teachers meaning that his study does not agree with our study because 47.8% is less than 50% being the average. These differences between various studies, including ours, could be due to utilization of different tools for assessing ADHD knowledge

Our results are also in line with the study in Australia, Kos *et al*, reported that 60.7% of the items on the ADHD knowledge indicated a No response on questionnaires answered by teachers.

The poor knowledge of teachers regarding ADHD treatment observed in this study is attributed to inadequate training of teachers in special education at college, a study reviewed that 30 representing 60% teachers that took part in the study studies special education while 20 representing 40% did not. The study also discovered that even if the majority of teachers learnt special education, it was done on the surface that most teachers were even unable identify learners with various disabilities including ADHD.

Training of teachers is very essential in diagnosis and treatment of ADHD. The findings obtained in this study are in line with the study by done by Saudi who found that, 12.3% of teachers attended courses related to ADHD and this training was not significant with teachers' knowledge regarding different aspects of the disorder which reflect inadequate training. Training of teachers is very essential in diagnosis and treatment of ADHD.

In a quest to find out about teachers' knowledge about ADHD, the findings also revealed low teacher experience in handling learners with ADHD. Statistics from chapter four indicated that 38 teachers out of 50 representing 76% said they had no experience while 12 teachers out of 50 representing 24% said they had experience in teaching children with ADHD. This shows a drastic challenge that teachers may be facing in the schools. The amount of education and training a teacher has about ADHD also affects their Willingness to seek and apply strategies. This is in line with Cormier et al. (2008) reported that teachers with more education in ADHD were more likely to seek services that are beneficial for students and creates a more effective learning environment.

Studies also reports that due to less experiences from teachers due to lack knowledge about ADHD

most pupils are being stigmatised from teachers. Findings also showed that whether teachers perceived ADHD to be *real* or not, they provided limited support to the pupils, this is in line with the study conducted by Singh, (2011). Kendall (2016) found adolescents expressed largely negative views of teacher behaviour, displaying a common theme of feeling humiliated after being shouted at in front of peers.

The findings are also in line with Dunne and Moore (2011) who reported similar experiences of alienation and exclusion exacerbated by unsupportive teachers. Honkasilta et al. (2016) also shares similar findings in which adolescents evaluated teachers' behaviour as: disproportionate; traumatising; neglectful and unfair due to less experience, From the study, adolescents that had ADHD condition saw their own behaviour as justified in response to how they were treated by teachers.

5.1.2 Challenges faced by Teachers in teaching Children with ADHD in primary Schools

The teachers' responses on the challenges faced in teaching children with ADHD show that lack of enough materials when teaching such individuals is one of the obstacles that affect the teaching of such categories of children in schools. The data collected from the participants revealed that pupils always run up and down disturbing other learners and lack concentration resulting into poor performance. That outcome is in line with the study done by Benedictis et al. (2007) the reality is that students with ADHD can distract everyone including the teacher.

The other challenges that these types of students causes in a classroom is that they demand for attention by talking out of turn or moving around the room, they have trouble following instructions, especially when they're presented a list, they often forget to write down homework assignments, do

them, or bring completed work to school, they often lack fine motor control, which makes note-taking difficult and handwriting a trial to read, they often have trouble with operations that require ordered steps, such as long division or solving equations, they usually have problems with long-term projects where they were is no direct supervision, they don't pull their weight during group work and may even keep a group form accomplishing its task .

The results also reveal that children with ADHD condition tend to be slow in grasping information due to inadequate concentration. These findings are in line with those found by Abikoff et al (2002) (as cited in Hay, D., Kos, I., & Richdale, A. (2006)) who, in his study, confirmed that Children with AD/HD might display these types of behaviours in and out of the classroom: a hard time paying attention, day dream a lot, not seem to listen, be easily distracted from schoolwork or play, forget things, be in constant motion or unable to stay seated, squirm or fidget, talk too much, not be able to play quietly, act or speak without thinking, having trouble taking turns, and interrupting others are some of the common characteristics that are being displayed in a classroom situation. The study is in line with Benedictis et al, 2007, who argued that Students with ADHD pay the price for their problems in low grades, scolding and Punishment, teasing from peers, and low self-esteem.

The study also indicated that pupils with ADHD over react in situations hence making a lesson difficult, they exhibit interruption and restless behaviour thereby making teaching and learning a challenge and they don't take learning seriously hence difficult to manage the class. These findings are also in line with Abikoff et al (2002) who also indicated that Children with AD/HD may have "difficulties concentrating on school work,

frequently interrupt conversations or activities, and have difficulty remaining seated when requested to do so. Though, it is typical for children at certain ages to exhibit these types of behaviours, most children will usually outgrow them.

The other challenge is that teaching children with ADHD is stressful this is in line with the study done by Beszterczey et al. (2002) that stated that "general education elementary school teachers rated students with ADHD as significantly more stressful to teach than their classmates without ADHD" These frustrations lead to biases, prejudices and stereotypes of these students with ADHD.

Teachers' Attitudes about ADHD was also another challenge that came out prominently, is it also in line with Julie's research findings where she came up with factors that perpetuates the negative attitudes as follows;

Lack of control, indicated a perception by teachers that children with ADHD have very little control over their own behaviour, and that managing the behaviour of these children is quite difficult. Negative classroom effects, showed a belief that children with ADHD have a negative effect on the classroom environment, where children were seen as a disruption and a frustration to teaching,

Diagnostic legitimacy, indicated an acceptance of the diagnosis of ADHD. Whilst there was a belief that ADHD is diagnosed too often, there was a general consensus that ADHD is a valid and legitimate diagnosis.

Perceived competence, showed that teachers believed they have the skills and ability to manage students with ADHD. Influences to management indicated that teachers' classroom management of a student with ADHD would not

be strongly influenced by parental or staff beliefs, or the ADHD-status of a child. The other factor is, Expectations, this revealed that teachers hold some expectations about ADHD and the children with the condition.

5.1.3 The Prevalence rate of children that Showed Symptoms of ADHD among pupils in Primary Schools.

In terms of prevalence rate, the information collected in this study shows that out of the total of 50 children, 5 of them representing 10% were found to show symptoms of ADHD Inattentive type while 2 representing 4% were said to have shown symptoms of both ADHD Inattentive and Hyperactive Impulsive type. Therefore, the prevalence rate as of this study shows 14%. This is even much higher when compared to a research conducted by Tembo (2014) in Lusaka urban government schools in Emmasdale zone who indicated that 9.1% of the pupils had signs and symptoms suggestive of hyperactivity, inattentiveness and impulsiveness (ADHD). In this case, since there were 7 children out of 50 who had suggestive symptoms of ADHD, the prevalence, which is the proportion of a population that has the condition at a specific point in time in the general population, is $7/50$ which is 14% prevalence rate in Pemba district southern province. The prevalence rate obtained in this study is within the range of the results that were obtained in Columbia done by Pineda, Lopera, and Palacio, (2001), showed the prevalence rates of 19.8% and 12.3% for boys and girls respectively.

Results from this study also shows that more children suspected to have ADHD symptoms had the inattentive type 5 of them representing 10% were found to Show symptoms of ADHD Inattentive type while 2 representing 4% were found to have both symptoms of ADHD Inattentive and Hyperactive Impulsive type. None

showed the symptoms ADHD Hyperactive impulsive type only

The study is in line with the study done in Nigeria by Chinawa (2014), we had more children with ADHD-I than with ADHD-H or ADHD-C. This was confirmed by Erik in his study where he noted a high frequency of ADHD-I among children with ADHD. This was also corroborated by a Nigerian study. It has been reported that up to 98% of individuals diagnosed with ADHD during childhood no longer meet criteria for a diagnosis of ADHD-H at follow-up seven to eight years later.

In addition, in the US, children diagnosed with ADHD, when reassessed each year for eight years, were more likely to shift to a different subtype of ADHD. We did not follow our subjects over a long period of time. As such, we do not know if they changed ADHD subtype over time.

Furthermore, the study showed that boys have high chances of having ADHD because from the findings out of 7 children that showed signs of ADHD 5 were males representing 10% from the total population while 2 were females representing 4 per cent from the total population. This study is in line with (Burns et al., 2017), who also found that males had a higher prevalence of ADHD than females (3.5: 1) and had about three folds increased chance of having ADHD. This was in concordance with several studies that showed a well-documented gender difference in the prevalence of ADHD.

According to a study conducted by Centre of Disease Control and Prevention (CDC) in 2006, "over 4 million children 3-17 years old were diagnosed with AD/HD and boys are twice as likely as girls to be diagnosed with ADHD".

The results from this study are also in line with Chinawa (2014) who stated that almost half of the

children with ADHD were diagnosed before the age of six years old. In other studies, symptoms of ADHD may have been diagnosed before the age of six years old. And there were cases noted of late-onset ADHD in some studies. ADHD may affect not only children less than 6 years old, but even those up to 18 years old.

5.2 Conclusion

Findings of the knowledge of teachers about ADHD and its prevalence rate in primary schools was obtained using a questionnaire that was administered to the teachers and a checklist was administered to the pupils that were randomly selected and the following findings were obtained. Results showed that most teachers do not have knowledge about the ADHD in primary schools. Most of them expressed ignorant to the objective by indicating that they knew nothing about it and thus, indicating a 'No' response on the questionnaires. Therefore, it is important for the government through the ministry of education to see to it that more teachers are trained in this area. Mostly, teachers who do not have knowledge will keep recording low pass rates.

The findings also revealed teachers had little experience in handling children with ADHD. This shows a drastic challenge that teachers may be facing in the schools. The amount of education and training a teacher has about ADHD also affects their Willingness to seek and apply strategies.

Findings also revealed that teachers faces a number of challenges in teaching children with ADHD in a classroom in that pupils always run up and down disturbing other learners, lack of concentration which causes poor performance, slow grasping of information due to inadequate concentration, pupils with ADHD over react in situations hence making a lesson difficult, they exhibit interruption and restless behaviour thereby making teaching and learning a challenge, they

don't take learning seriously hence difficult to manage the class, pupils with ADHD are always trouble makers, they are noise makers, they are mostly slow in completing tasks, lack of specialised teaching materials and pupils with ADHD are mostly stigmatised hence making them not to like school.

The prevalence rate of 14% was obtained from this study, that recorded an increase of 4.1% from the research that was conducted in Lusaka urban area by Tembo in 2014. the difference in percentage may be attributed to difference in characteristics where the samples were obtained, it can therefore be concluded that rural areas showed more signs of ADHD than urban areas, However, the prevalence rate was within the range of similar outcomes from Columbia where the rate was between 19.8% and 12.3% for boys and girls respectively.

The teachers on their part are responsible for helping shape the school environment adjusted to the student's needs and to the creation of a shared dialogue with parents. It is important and required that the educational staff know what ADHD is, know its characteristics and its expressions, as they are observed in the educational system, and the direct and indirect factors of the different behaviors, and understand the implications on the different areas of life on the level of the individual and his environment.

The awareness of the educational staff of the existence of ADHD sheds new light on the child and his behaviour and creates understanding of the need to look behind the child's words and/or actions. The understanding that grows from knowledge enables a look into the child's internal work and the understanding of processes that lead him to behaviour that is not appropriate. Lacking knowledge, awareness, and understanding, the educational staff cannot cope on an objective level

with the difficulties of the child with ADHD and approaches treatment from a place of anger, insult, and vulnerability and solves problems in an ineffective manner. In other words, the educational staff attacks the outside expressions of the child's difficulties, instead of connecting to the difficulties themselves, and from there creating an effective alternative method of coping.

The more the treatment is based on teamwork, the more it will be effective for the child. It is important to ascertain that all the professionals in the school are aware of the nature of the ADHD, know how to identify students who may need intervention, and know methods to treat problems related to the disorder. Teachers need to understand that the behaviors that accompany ADHD are chronic and that it is possible only rarely to prevent them entirely, certainly not in a framework of one school year. Teachers are required to learn how to cope with educational and behavioural needs of children with ADHD. As of today, many teachers are not willing to actually cope effectively with the needs of these children, even after they participated in workshops or read the relevant professional literature. Educators need to increase their awareness and further the depth of their understanding of the disorder.

All educators and professionals encounter children with ADHD daily in the school. Therefore, it is important that all the educators have at least a basic knowledge and possibility to identify the children and to plan for them an educational plan that will meet their needs and make them successful and proactive citizens

The researcher chose this topic to acquire insight into the teachers' knowledge, experience and prevalence rate about ADHD. This insight will constitute a significant basis for proactive intervention to the guidance of teachers regarding the best way to work with children with ADHD.

5.3 Recommendations

Based on the findings and in line with the study objectives, the following recommendations were made,

- Exploratory studies like this one are essential for formulating policy on intervention of learners with ADHD in the country. The study has shown a further reflection of less attention paid to issues of childhood neuro-developmental disorders by Governments. This calls for government to put deliberate policies that helps learners with ADHD in schools.
 - Adequate school health service planning must be put in place in Zambia to help diagnose and combat ADHD and other childhood neuro-developmental disorders.
 - Teacher training institutions and universities should review their curriculum to include mandatory units/courses for special needs education so that teachers are prepared to work in any environment with disabled students including learners with ADHD being on the main focus.
 - The other recommendation is that the province, district personnel should provide more training and education in the area of ADHD for general education teachers. This education and training can be provided by in-services with professionals who specialize in ADHD in general, the diagnostic process, IEP, and interventions. Research has shown that teachers with more education are more confident in their ability to teach these types of students. These types of teachers are also more willing to seek information and strategies to use with these students.
 - Sufficient opportunities for Continuous professional development CPD must be provided by creating special education programmes aimed identifying and handle learners with ADHD in schools.
- Overall, the assessment of teachers' behaviour showed that the most commonly used strategy to manage the behaviour of a student with ADHD was reinforcement. Reinforcement was used significantly more frequently than negative consequences, planned ignoring or emotional support, and planned ignoring was the least commonly used strategy. Given that all of these strategies have been thoroughly validated in the literature when implemented correctly, it is suggested that programs be developed to instruct teachers on the correct use of each of them. This is important because if the strategies are implemented incorrectly, they may be ineffective. Teachers should also be encouraged to use these strategies equally often in their classroom to manage students with ADHD.
 - While statistically teachers were shown to use reinforcement more often than other strategies, they only used reinforcement once or twice a day. Considering that children with ADHD often require frequent reinforcement scheduling to obtain significant behaviour change (DuPaul & Stoner, 2003), it is unlikely that the behaviour of a child with ADHD would improve if a teacher reinforced him once or twice daily. Therefore, to enact significant behaviour change in these children, teachers need to increase their use of reinforcement considerably (e.g., at least once or twice per task). Future studies should involve the development of training packages designed to inform teachers of the importance of the repeated use of reinforcement, as well as highlighting the effectiveness of frequent use of the remaining management strategies

5.3.1 Recommendation for Further Research

- The recommendation is that more research is needed in the area of teacher's perceptions, attitudes, and biases of pupils with *AD/HD*, more research would further the understanding of how that affects the teacher and pupil relationship
- This would create a more educated and capable teacher who can provide a better education for pupils with *AD/HD*. These teachers may also not develop the biases, perceptions and negative attitudes against Pupils with *AD/HD*

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REFERENCES

- [1] Akram, G., Thomson, A.H., Boyter, A.C., et al. (2009) *ADHD and the role of medication: knowledge and perceptions of qualified and student teachers*. European Journal of Special Needs Education, 24 (4): 423–436
- [2] Al-Omari, H., Al-Motlaq, M.A. and Al-Modallal, H. (2015) *Knowledge of and Attitude towards Attention-deficit Hyperactivity Disorder among Primary School Teachers in Jordan*. Child Care in Practice, 21 (2): 128–139
- [3] American Association of Pediatrics, (n.d.). *ADHD*. Retrieved December, 2018, from: <http://www.aap.org/healthtopics/adhd.cfm>
- [4] Al azzam, M., Al Bashtawy, M., Tubaishat, A., Batiha, A. M. & Tawalbeh, L. (2017). *Prevalence of Attention Deficit Hyperactivity Disorder among School-Aged Children in Jordan*. East Mediterr Health j, 23, 486-491.
- [5] Alzaben, F. N., Sehlo, M. G., Alghamdi, W. A., Tayeb, H. O., Khalifa, D. A, Mira, A, T., Alshuaibi, A. M., Alguthmi, M. A., Derham, a. a. & Koenig, H. G. 2018. *Prevalence of Attention Deficit Hyperactivity Disorder and Comorbid Psychiatric and Behavioral Problems Among Primary School Students in Western Saudi Arabia*. Saudi Med j, 39, 52-58.
- [6] APA 2013. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. (5th ed.) Arlington, va: American psychiatric publishing.
- [7] American Psychiatric Association, (2000). *Diagnostic statistical manual of mental disorders, Fourth edition, text revision*. Washington, DC: American Psychiatric Association. American Psychiatric Association. (2013) *Diagnostic and Statistical Manual of Mental Disorders, 5th Edition*. Washington, D.C: American Psychiatric Publishing
- [8] Ashworth, P. (2008) *"Conceptual foundations of qualitative psychology"* In Smith, J.A. (Ed.) *Qualitative Psychology: A Practical Guide to Research Methods*, 2nd Edition. London: SAGE Publications. pp. 4 - 25
- [9] Avisar, A. and Lavie-Ajayi, M. (2014). *The Burden of Treatment: Listening to Stories of Adolescents with ADHD about Stimulant Medication Use*. *Ethical Human Psychology and Psychiatry*, 16 (1): 37 - 50
- [10] Barkley, R. and 74 co-endorsers. (2002) *International Consensus Statement on ADHD. Clinical Child and Family Psychology Review*, 5: 89–111
- [11] Barkley, R.A. et al. (2004) *Critique or Misrepresentation? A Reply to Timimi et al. Clinical Child and Family Psychology Review*, 7 (1): 65–69
- [12] Barkley, R. A. (2006). *Attention deficit hyperactivity disorder: A handbook for diagnosis and treatment*. (3rd ed.). New York: Guilford Press.
- [13] Barkley, R. A. (2013). "Attention Deficit-Hyperactivity Disorder in Children". In Hooper, S. R., Hynd, G. W. and Mattison, R. E. (Eds.). *Child psychopathology: Diagnostic criteria and clinical assessment*, 2nd Edition. New Jersey: Psychology
- [14] Ballantin, C, (2015) *Teachers Knowledge and Perception of students with ADHD Label*. Governor's state university.
- [15] Burns, G. L., Becker, S. P., Servera, M., Bernard, m. d. & Garcia-banda, g. 2017. *Sluggish cognitive tempo and attention-deficit/hyperactivity disorder (adhd) inattention in the home and school contexts:*

- parent and teacher invariance and cross-setting validity. Psychol assess*, 29, 209-220.
- [17] Clearly, k., DuPaul, g., jitendra, a., vile junod, r., & volpe, r. (2006). Classroom observations of students with and without adhd: differences across types of engagement. *Journal of school psychology*, 44(2), 87-104. Retrieved from Eric database
- [18] Dupaul, G. J. & Stoner, G. (2003). *ADHD In the Schools: Assessment and Intervention Strategies*. New York: The Guilford Press. Fayyad J. et al. (May 2007). Cross-national prevalence and correlates of adult attention-deficit hyperactivity disorder. *British Journal of Psychiatry*, 190(5):402–409.
- [19] Fayyad J. et al. (May 2007). Cross-national prevalence and correlates of adult attention-deficit hyperactivity disorder. *British Journal of Psychiatry*, 190(5):402–409.
- [20] Farahat, T., Alkot, M., Rajab, A. & Anbar, R. 2014. *Attention-deficit hyperactive disorder among Primary School Children in Menoufia Governorate*, Egypt. *Int j family med*, 2014, 25736
- [21] Feingold association of the United States. (2012). *The Feingold bluebook, behaviour, learning, and health: the dietary connection*. [Pdf version]. Retrieved from: <http://www.fgshop.org/bluepdf.aspx>.
- [22] Gargaro, D (2009) *Teachers 'Attitude and Perceptions Pertaining to Students with ADHD and Effects on the Teacher/student Relationships*. University of Wisconsin-Stout. 256-1260. sciutto, m.j.,
- [23] MoE (2009) *Statistical Bulletin on SEN Prevalences in Zambia*.
- [24] National Association of School Psychology, (2005). *Diagnosis and Treatment of Attention Disorders: Roles of School Personnel*. Retrieved November, 2011, from: <http://www.nasponline.org/resources/factsheets/addfs.aspx1>
- [25] Osman, A. M., Omer, I. M., Mohammed, A. A. & Abdalla, S. E. (2015). The Prevalence and Factors Affecting Attention Deficit Hyperactivity Disorder Among School Children in Khartoum State. *Sudan J Paediatr*, 15, 29-36.
- [26] Skounti, M., Giannoukas, S., Dimitriou, E., Nikolopoulou, S., Linardakis, E. & Philalithis, A. 2010. Prevalence of Attention Deficit Hyperactivity Disorder in School children in Athens, Greece. Association of ADHD Subtypes with Social and Academic Impairment. *Attention deficit hyperactivity disorder*, 2, 127-32.
- [27] Tembo, a. (2014), *A Preliminary Investigations of the Prevalence of Attention Deficit Hyperactivity Disorder and its Symptoms in Selected Schools in Lusaka urban*, Lusaka: UNZA.
- [28] Terjesen, M.D. & frank, a.s.b. (2000). Teachers' Knowledge and Misperceptions of Attention-Deficit/Hyperactivity Disorder. *Psychology in the schools*, 37, 115-122
- [29] Wilcox, E.C., Washburn, R., & Patel, V. (2007). Seeking help for ADHD in Developing Countries: A Study of Parental Explanatory Models in Goa, India. *Social science and medicine*, 64, 1600-1610.
- [30] Xu, Guifeng et al. (August 2018). *Twenty-Year Trends in Diagnosed Attention-Deficit/Hyperactivity Disorder Among US Children and Adolescents, 1997-2016*. *JAMA Network Open*. 2018; 1(4): e181471.