

**IMPACT OF EDUCATOR KNOWLEDGE OF ATTENTION  
DEFICIT HYPERACTIVITY DISORDER ON TEACHING  
STRATEGIES**

by

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## DECLARATION

I declare that ***IMPACT OF EDUCATOR KNOWLEDGE OF ATTENTION DEFICIT HYPERACTIVITY DISORDER ON TEACHING STRATEGIES*** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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## **DEDICATONS**

I am dedicating this dissertation to:

- My late father Mr Joe Appalsamy, for his love and undying belief that this dissertation would one day be completed and especially for being the driving force behind my academic success, always believing that I could achieve anything I put my mind to.
  
- My mother, Mrs Santha Naidoo for her patience and understanding throughout my studies.
  
- My sister, Priya for being the inspiration behind the topic of this dissertation.

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- I would like to give humble thanks to God, for giving me the strength to complete my research through this trying time.

## **ABSTRACT**

Attention Deficit Hyperactivity Disorder (ADHD), an intellectual impairment, generally characterised by inattentiveness and impulsivity has become prevalent in South African schools. ADHD learners require support from within the classroom to accommodate their academic and behavioural needs. A quantitative research was undertaken to determine the impact of an educator's knowledge of ADHD on teaching support strategies. An educator's ADHD knowledge is based on their understanding of the diagnosis, causes, symptoms and management of ADHD as well as the effect that ADHD has on a learner's classroom skills. Data was obtained from responses to questionnaires from randomly selected respondents within randomly selected government secondary schools in the Umlazi District of Kwa-Zulu Natal. The data was descriptively analysed to conclude that the level of ADHD knowledge possessed by educators impact on the appropriateness of their teaching strategies. There is a need to impart knowledge regarding learning barriers to educators, to ensure the efficacy of teaching strategies.

### **KEY TERMS**

Attention deficit hyperactivity disorder

Teaching strategies

Accommodation of learners' needs

Assessment of teaching strategies

Classroom effects of ADHD

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## **CHAPTER ONE : I N T R O D U C T I O N**

### **1.1 BACKGROUND TO THE STUDY**

Attention Deficit Hyperactivity Disorder (ADHD) is a neurological disorder which affects a learner's perceptions, response and behaviour in multiple settings. ADHD may present as behavioural problems, characterised by inattentiveness, hyperactivity and impulsivity (Gaddes & Edgell 1994: 262). The academic implications of ADHD include varying barriers to learning such as problems with fine motor skills, which show up as poor handwriting; as well as poor working memory which affects attention. Modern medicine such as amphetamines and psychostimulants only serve to manage the disorder. However, combined interventions such psychotherapy, drug therapy and classroom interventions can help an ADHD learner achieve his or her academic potential.

Recent research conducted by Hariparsad (2010), to determine the prevalence of ADHD learners within South African schools, found that it is a common disorder that is on the rise and currently affects approximately 3–5% of school-going children. These results revealed that ADHD is more prevalent in boys than girls of school going age. About 5.1% more boys are likely to be diagnosed with ADHD combined with a learning difficulty as compared to girls in the 12 to 17 years old category (p.17-18). ADHD is categorised as an intellectual impairment, a type of barrier to learning. This impairment is characterised by a deficit in cognitive function and adaptive skills, affecting a learner's ability to reason and understand (Landsberg 2006: 380-381).

In order to accommodate ADHD learners in a mainstream educational setting, the state has devised and emphasised the practices of various policy documents which promote inclusion. Documents such as the NCESS (National Commission on Education Support Services) and the NCSNET (National Committee on Special Needs in Education and Training) of 1997 focus on the

provision of education and training of educators to promote inclusion of ADHD learners (Engelbrecht & Green 2007:54). These and other, later policy documents provide information on barriers to learning, different learning styles and ways of accommodating these differences in the classroom. One such method is the use of teaching strategies to promote teaching and learning so that all barriers to learning are accommodated. The appropriateness of teaching strategies for a lesson to accommodate the needs of an ADHD learner can impact on academic as well as behavioural performance.

## **1.2 THE RESEARCH PROBLEM**

The Salamanca Statement and Framework for action on Special Needs Education of 1994 (Engelbrecht & Green 2007:03), emphasized that learners with disabilities of any nature should be educated with their age peers. This resulted in the redesign of already existing education policies and practices to adapt to learners. This process UNESCO (United Nations Educational, Scientific and Cultural Organisation) termed 'inclusion' (Engelbrecht & Green 2007:03). As a result of this document, South Africa drew up and implemented a number of education policy documents such as the Education White Paper 6, Special Needs (DoE:2001). Engelbrecht and Green (2007:54) also mention other important documents which were developed by the NCESS (National Commission on Education Support Services) and NCSNET (National Committee on Special Needs in Education and Training) of 1997. These focused on the provision of education and training to encourage the development of inclusive education. It emphasised the need for inclusive education and support was to ensure that all learners learn actively (Engelbrecht & Green 2007: 54). Inclusive education saw the beginning of a move away from special education for learners with special needs towards mainstreaming these learners.

Inclusive education acknowledges that all children and youth can learn and that they need support (Education White Paper 6,2001:16). Most importantly, inclusive education deals with and focuses on how educators will accommodate diversities such as learning differences in the classroom. ADHD learners are an example of learners with intellectual barriers to learning, brought about by poor behaviour, impulsivity and a lack of concentration which leads to poor working memory (Gathercole:2008).

The interaction between educators and learners is important in making the learning process successful (Goodman, Brady et al 2008:208). This can be facilitated by strategies such as classroom or school yard management, the use of stimulus resources during lessons and the adjustment of teaching and learning strategies which is imperative for ADHD learners to perform optimally. According to DuPaul G.J. (2007), educator interventions, especially teaching strategies, counteract or prevent the behavioural and academic problems of an ADHD learner. The short term effects of such strategies are to stimulate cognitive processes and the long term effects include positive self-discipline outcomes (p184-197).

However, to employ appropriate or effective teaching strategies to assist an ADHD learner in the classroom, the educator should have some basic knowledge and understanding of the disorder, including its aetiology, treatment and management options.

### **1.3 AIM OF THE STUDY**

Research conducted by Knouse (2009), has found that better knowledge and understanding of ADHD in children at school level shows a more adaptive behaviour than negative perceptions towards them from their educators. Educators play an extremely important role in moulding children and helping them through life's little crisis. The case study concluded that educators having some knowledge on ADHD, are able to adapt teaching to suit the needs of the learner. The interpretative findings were that high and average ADHD knowledge educators recognised that ADHD is a serious condition and they are likely to seek outside help with its management.

Baseline knowledge on common learner disorders can assist educators in their choice of teaching and learning strategies. Strategies involving the optimal use of resources to engage a learner's attention will impact on academic performance. An improvement in learning is indicative of appropriate and effective teaching strategies deployed by a skilful educator (Goodman, Brady et al 2008:207).

The aim of this research is to ascertain the impact of educators' knowledge of Attention Deficit Hyperactivity Disorder on their teaching strategies.

### **1.4 RESEARCH QUESTION**

What impact does an educator's knowledge of attention deficit hyperactivity disorder have on teaching strategies?

## **1.5 RESEARCH METHODOLOGY**

### **1.5.1 INTRODUCTION**

Quantitative researchers are ones that seek causal determination and make predictions and generalization based on their findings. In order to ascertain the impact of educators' ADHD knowledge on teaching strategies, the research design employed an in-depth questionnaire approach. The purpose of selecting this instrument was to assess the level of knowledge of the respondents of a particular idea. As questionnaires are often used to provide information to other data, the researcher posed questions to the respondents with regard to their ADHD knowledge in order to determine the impact of their ADHD knowledge on their teaching strategies. In-depth questionnaires are advantageous as they are a highly standardised. This ensures reliability in that all sample respondents will answer the same questions. The names of the respondents were not required thus ensuring confidentiality and allowing the respondents the confidence to truthfully answer all questions posed. The researcher made use of an ADHD educator knowledge scale and also obtained demographic information by means of the questionnaire.

### **1.5.2 RESEARCH DESIGN**

Quantitative research methodology involves the general measurement of variables, or correlation between subjects. This method relies heavily on numbers in reporting results. The statistics involved in this type of research leads to conclusions, as it provides researchers with the tool to understand and critique professional articles and to improve evaluation of student learning (McMillan & Schumacher 2006:149).

## **SAMPLES:**

In order to choose respondents for the research, the researcher made use of the random sampling Technique. This particular technique allowed for respondents from the populations to be selected as a representative of the topic, as they served as information-rich samples (McMillan & Schumacher 2006:126). Patton (2002) describes information-rich samples as those from which one can learn a great deal about issues of central importance to the research. The sample population is defined as educators who are currently teaching in mainstream government secondary schools. Respondents within this sample population conformed to the following characteristics of the sampling frame:

1. Possessed an NQF teaching qualification.
2. Teaching in either the GET phase or FET phase or in both.

The survey respondents comprised of twenty educators conforming to the characteristics of the sampling frame (Ten educators from each of two secondary schools). These twenty sample respondents were selected from a sample population of approximately eighty educators. The sample secondary schools are localised to the Durban Central region, within the Umlazi District of the eThekweni Municipality in KwaZulu Natal, in South Africa, and were selected through simple random sampling. Two schools of the sample population of thirty two secondary schools were selected.

### **1.5.3 DATA COLLECTION TECHNIQUES**

In a quantitative research design a data collection instrument is used to obtain numerical indices that correspond to the characteristics of the respondents. General methods of data collection include paper and pencil tests where scores are summed up and a conclusion is reached, questionnaires which are used for scoring purposes and observations which

are used for recording time and behaviour of respondents ( McMillan & Schumacher 2006:178-208).

In this research study a standardised structured questionnaire was used as the data collection instrument. Questions pertained to respondents' demographics such as their personal background details and their knowledge of ADHD, which comprise of four subscales; namely associated features, symptoms/diagnosis, treatment, and teaching support strategies. The questionnaire was devised on the foundation of the Knowledge of Attention Deficit Disorder Scale (KADDS) developed by Sciutto, Fedhamer et al (2000). The latter part of the questionnaire comprised of 43 statements to which respondents would select an appropriate given alternative. The questionnaires were administered within the settings of the respondents' work environment, with permission from the Kwa-Zulu Natal Department of Education and the school principals.

#### **1.5.4 RELIABILITY AND VALIDITY**

##### **VALIDITY**

McMillan and Schumacher (2006), define validity as the degree to which interpretations of data have mutual meaning\ for both participants and researchers(p.324-326). The structure of questions posed do not influence sample respondents to show themselves off. Structured response questions also limit the variation in answers (Tuckman:1999:237). Within this study a categorical response mode was used where answers were limited to 'YES/NO/DON'T KNOW'.

##### **RELIABILITY**

To ensure the reliability of the research, the researcher must have a thorough understanding of what is being analysed and must make use of proper recording tools (Gall, Borg et al 1996:338-339).



### **1.5.5 DATA ANALYSIS**

Quantitative analysis requires logical analysis, as data collected is placed into logical, meaningful categories to be examined in a holistic fashion in order to find a way to communicate this interpretation to others (Hoepfl 1997:7). One form of data analysis is descriptive analysis, in which responses collected from respondents with the questionnaire, are classified in order to reach an in-depth understanding (Donald Ratcliff undated:1-6). In the questionnaire, questions in the form of statements were answered by the selection of a 'True', 'False' or 'Don't know' alternative which was provided on the questionnaire. These responses were then scored according to the devised scoring procedure. The data gathered from the respondents, once scored and classified, provided information about educators' level of knowledge of ADHD with regard to associated features, symptoms/diagnosis, treatment and its impact on their teaching support strategies in accommodating the needs of learners with the disorder in the classroom.

### **1.5.6 ETHICAL CONSIDERATIONS**

#### **CONFIDENTIALITY**

These individuals were assured that their identification would be kept a secret always, as their names were not required when completing the questionnaire.

#### **INFORMED CONSENT**

Consent for the study was obtained from:

1. The Kwa-Zulu Natal Department of Education in order to conduct the research within the school.
2. The principals of the schools so that the questionnaires could be administered within the working establishment.

## **1.6. DEFINITION OF KEY TERMINOLOGY**

### **Attention Deficit Hyperactivity Disorder (ADHD)**

ADHD is a learning impairment which may result in challenging behaviour. It is characterised by inattentiveness, over-activity and impulsivity (Gaddes & Edgell 1994:262). Learners with ADHD may present with characteristics such as inattentiveness where the learner fails to give close attention to detail, has difficulty sustaining attention in tasks and is easily distracted. The other characteristic is hyperactivity which may show up as constant fidgeting or interrupting others (Landsberg 2006:368).

### **Inclusive Education**

Inclusive education, according to its most basic definition, means that students with disabilities are supported in chronologically age-appropriate general education classes in their home schools and receive the specialized instruction delineated by their individualized education programs (IEPs) within the context of the core curriculum and general class activities (Inclusion White Paper 2002:1).

Inclusive education is about acknowledging that all youth can learn and that they all need support; accepting and respecting that all learners are different in some way; changing attitudes, behaviours and teaching methods to meet learners' needs and empowering learners by developing their individual strengths (Education White Paper 6, Special Needs DoE:2001:16).

### **Teaching Strategies**

A teaching strategy may be defined as the use of methods of instruction in a classroom to accomplish understanding of the course content and goals as well as to engage in active learning (Tewksburg & MacDonald 2005). The process of teaching involves attempts by an educator to bring about understanding or learning of content to a group of learners. Set objectives can only be achieved if the educator is organised, makes appropriate use of

teaching techniques and teaching material and knows the subject matter (Clark & Starr 1996:70-90).

## **1.7 CONCLUSION**

The researcher has provided vital information with regards to the research study within this chapter. A concise, yet informative background to the study outlined the important points regarding ADHD, its prevalence and the need for educators to have baseline knowledge of the disorder to effectively accommodate the ADHD learner in the classroom. The researcher outlined the research design and procedures that were undertaken during the study. Key terminologies were also explained.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1. INTRODUCTION**

The emphasis of present day education is the practice of inclusion. According to Engelbrecht and Green (2007), inclusive education deals with the accommodation of learners' needs, their learning styles and barriers to learning. Most importantly, it deals with and focuses on how educators will accommodate diversities in the classroom, remembering that learners with barriers are welcome in a mainstream classroom. Diversities refer to a variety of impairments as well as racial and cultural differences. Intellectual impairment for example, deals with a deficit in cognitive function and adaptive skills which affect a learner's ability to reason and understand. A learner's intellectual impairment may be classified as mild, moderate, severe or profound based on IQ tests. Attention Deficit Hyperactivity Disorder (henceforth ADHD) is one such intellectual impairment that requires assistance from within the classroom and outside (p.3).

ADHD is a neurological disorder which affects an individual's perceptions, response and behaviour. Knouse (2009) explains that better knowledge and understanding of ADHD in children at school level results in more adaptive behaviour than negative perceptions towards them from their educators. Educators play an extremely important role in moulding children and helping them through life's little crises. However, Rabiner (2004) states that ADHD learners fail to receive the assistance required to being successful if educators lack important knowledge about the disorder. Evidence of poor knowledge can be seen in educators who have no idea about the medication used to manage ADHD and side effects of that medication, or ways of stimulating or accommodating the ADHD learner (Scuitto, Terjesen et al 2000:115-117).

## 2.2 THEORETICAL FRAMEWORK

The importance of an educator's attitude towards inclusive practices plays a pivotal role in the academic achievement of ADHD learners. Educators must understand and believe that their classroom behaviour and attitude affect the academic attitude of their learners. ADHD being a neurological disorder affects a learner's perception, response and behaviour and is therefore associated with an increased rate of problem behaviour categorised as internal behaviour (example: withdrawal) and external behaviour (example: aggression) (Gaddes & Edgell 1994:254-255). This may result in ADHD learners having impaired functioning in multiple settings such as home, school and relationships. However, to assist these learners, educators must first have an understanding of what learning support actually entails. DuPaul and Eckert (1997) in DuPaul (2007) make mention of educators who are knowledgeable about ADHD, and their ability to adjust the teaching and learning process to suit the needs of the learner. They point out a further advantage to the academic intervention as it serves as a preventative measure to behavioural problems which are representative of ADHD learners, while misconceptions such as the belief that a change in diet affects ADHD do exist (p.188).

Rabiner (2004), states that ADHD learners fail to receive the assistance required to be successful as a result of educators who lack important knowledge about the disorder. Basic knowledge includes knowing the difficulties that ADHD learners experience and effective strategies that may be employed to help them. Kruger and Yorke (2010) define learning support as the means to enrich the classroom education by rendering a broad spectrum of assistance in order to assist the learner to achieve necessary outcomes (p.294).

Previous research suggest that educators need to adjust the curriculum to suit the needs of the ADHD learner by limiting distractions, giving simple instructions, focusing on learner strengths, modifying tests and assignments and making use of technology (Low 2008). Although educators need to employ teaching strategies and learning support they also need to observe learners within the learning environment. Scuitto, Terjesen et al (2000) refer to the pivotal role that educators play in providing critical diagnostic information about the characteristic behaviour of ADHD learners, which cannot take place if educators do not possess an adequate knowledge about the disorder (p.115-117).

Therefore this study will serve to identify perceptions of educators with regard to broader areas of ADHD knowledge such as symptoms; diagnosis; causes and treatment as well as their understanding of teaching strategies. The ADHD knowledge scale (KADDS) developed by Scuitto and Fedhamer (2000) will be employed as the data collection tool. As this study will serve to identify the perceptions of educators regarding ADHD it will also provide evaluative information that can be used to find conclusions to solve the problem, if any, surrounding the impact of educator's knowledge of ADHD and its impact in the classroom.

### **2.3 ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)**

ADHD, a learning impairment which may also result in behavioural problems is on the increase in South African schools. Statistics show that boys aged 6–17 years old are more likely to be diagnosed with the disorder than girls. However, the older the child, the lower is the incidence of learning difficulties (Patricia & Pastor 2010:15 in Haripersad 2010:17-18).

ADHD is characterised by inattentiveness, hyperactivity and impulsivity (Gaddess & Edgell 1994: 262). ADHD is associated with an increased rate of behavioural problems such as internal behaviour (example: withdrawal) and external behaviour (example: aggression). More than 60% of children with ADHD carry their symptoms into adulthood (Katz: 2011).

Educators with inadequate knowledge of ADHD may feel unprepared to handle the many challenges that ADHD children can pose in the classroom. These educators are less likely to seek support strategies for their learners. Many educators who possess some ADHD knowledge actually know of the myths surrounding ADHD. Pope and Francoeur (2010) make mention of ADHD myths such as its resulting poor parenting, that ADHD is indicative of being lazy and dumb and that ADHD children are using the condition as an excuse for their behaviour. Glass and Wegar (2000), Kos et al (2006) and Legato ((2010) indicate that it is also likely that educators' perceptions of ADHD learners affect their behaviour towards these learners (Legato, 2010:1-2). However, educators' perception of ADHD learners stem from their knowledge of ADHD.

### **2.3.1 DIAGNOSIS OF ADHD**

Educators play a pivotal role in identifying characteristics of ADHD in learners. Therefore educator knowledge of the disorder is imperative as they would refer learners for an ADHD assessment. Thereafter, healthcare professionals collect information about the learner across environments to gain a holistic view, rule out possible infections and lifestyles changes as causes, and determine a management regime (Martin:undated).

The diagnostic procedure entails the observation of certain characteristics. Paediatricians and child psychologists make use of standard guidelines provided by healthcare associations.

According to the Diagnostic Criteria for ADHD – DSM-IV-TR (Stern: 2000), there are three types of ADHD:

- 1) Combination of Inattention, Hyperactivity and Impulsivity
- 2) Predominantly Inattentive Type with no signs of hyperactivity or impulsivity for a period of 6 months.
- 3) Predominantly Inattentive Type with signs of hyperactivity and impulsivity (p.2-3).

The criterion for diagnosis entails five categories. Firstly that six (or more) of the following symptoms of either inattention or hyperactivity - impulsivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with the developmental level:



|  |  |  |
|--|--|--|
| <p>Inattention:</p> <ol style="list-style-type: none"> <li>1. fails to give close attention to details or</li> <li>2. makes careless mistakes in schoolwork, work, or other activities</li> <li>3. often has difficulty sustaining attention in tasks or play activities</li> <li>4. often does not seem to listen when spoken to directly and often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behaviour or failure to understand instructions)</li> <li>5. often has difficulty organizing tasks and activities and often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)</li> <li>6. often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)</li> <li>7. is often easily distracted by extraneous stimuli</li> <li>8. is often forgetful in daily activities</li> </ol> | <p>Hyperactivity:</p> <ol style="list-style-type: none"> <li>1. often fidgets with hands or feet or squirms in seat</li> <li>2. often leaves seat in classroom or other situations in which remaining seated is expected</li> <li>3. often runs about or climbs excessively in situations it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)</li> <li>4. often has difficulty playing or engaging in leisure activities quietly</li> <li>5. is often "on the go" or often acts as if "driven by a motor"</li> <li>6. often talks excessively</li> </ol> | <p>Impulsivity:</p> <ol style="list-style-type: none"> <li>1. often blurts out answers before questions have been completed</li> <li>2. often has difficulty awaiting turn</li> <li>3. often interrupts or intrudes on others (e.g., butts into conversations or games)</li> </ol> |
|--|--|--|

(Stern: 2000:3-4)

Secondly, that some hyperactive-impulsive or inattentive symptoms that caused impairments were present before age 7 years.

Thirdly, that some impairment from the symptoms is present in two or more settings (e.g. at school [or work] and at home).

Fourthly, that there must be clear evidence of clinically significant impairment in social, academic or occupational functioning.

Fifthly, the symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (E.g. Mood Disorder, Anxiety Disorder, Dissociative Disorder, or Personality Disorder).

Diagnosis in children is made by comparing their behaviour to other children in the same age group. Diagnosis in adults is based on a different set of criteria. These include chronic forgetfulness, anxiety, low self-esteem and impulsiveness; all of which can lead to emotional and social problems (Katz: 2011).

ADHD's biological origins are not clearly understood. But whatever the cause of the disorder, the central nervous system (CNS) consisting of the brain and spinal cord, is affected. In order to determine the degree of differentiation of the CNS of a child with ADHD compared to that of child without ADHD, medical personnel may make use of one or more of the following medical procedures:

a) Electroencephalogram (EEG)

It is an apparatus used to record spontaneous electrical activity of the brain. It is useful in locating brain lesions and provides information about the development of the cerebrum.

b) Neurosonography

This procedure makes use of sonar to explore the brain of a newborn with suspected brain pathology. However, MRI and CT scans are more often used.

c) Magnetic Resonance Imaging (MRI)

This is a powerful imaging technique that distinguishes between different types of body tissue. It is used to reveal the structure and functional state of the central nervous system (Gaddess & Edgell 1994:81-82).

Images from these procedures of an ADHD child's brain indicate significant differences within the brain as compared to that of a non-ADHD child in areas controlling attention (Rosack:2004). Research evidence also indicates decreased blood flow to the frontal lobes of the brain. The reduced blood flow to the basal ganglia (which are cluster of nerves in the brain), results in an inhibition of motor activity and causes restlessness (Gaddes & Edgell 1994: 273 -275).

### **2.3.2 CAUSES OF ADHD**

There are various possible causes of ADHD such as genetic factors; lead in old paint; smoking and consumption of alcohol during pregnancy by the mother; certain brain injuries and food additives (Gottesman: undated).

Genetically, the ADHD child has a distinctive pattern of brain growth that normalises with age but has a variation in the receptor for Dopamine, which creates a signalling problem for the brain (Singer 2007). According to Hunt, Paguin and Payton (2001) in Gottesman (undated), about 25% of ADHD children have a first degree relative with ADHD. ADHD is one of many disorders that can be passed down genetically from a first degree relative.

### **2.3.3 SYMPTOMS OF ADHD**

In DuPaul (2007), reference is made to a dual pathway model, which illustrates the relationship between ADHD symptoms and the difficulties ADHD learners experience academically (p.184). According to Rapport, Scanlan et al (1999) in DuPaul (2007), the cognitive pathway in the brain plays a role in influencing the effects of ADHD on achievement through memory, whilst the behavioural pathway influences the effects of ADHD on achievement through disruptive behaviour (p.184).

A learner experiencing ADHD tends to experience problems with active attention. A problem with active attention implies that the learner may be:

- unable to listen for the next instruction
- unable to remain focused to complete a task
- unable to process two sources of information simultaneously
- be easily distracted by extraneous events

(Gaddes & Edgell 1994: 254-255).

The learner may also present with a variety of problems relating to his/her classroom skills; including poor handwriting, poor balance and the inability to interpret information due to their visual or auditory perceptions. Generally learners with ADHD may experience other co-existing conditions such as disruptive behavioural disorders, depression, OCD (Obsessive Compulsive Disorder) and handwriting difficulties (Wheeler, Pumfrey et al 2009:69).

According to Sciutto; Terjesen et al (2000), having knowledge of primary symptoms of ADHD does not provide much information to educators, as compared to knowing the characteristics of the symptoms. The characteristics will provide a clearer understanding when selecting appropriate teaching strategies (p.116).

#### **2.3.4 MANAGEMENT OF ADHD**

Once diagnosed, the child is generally placed on chronic medication, which serves to calm and focus the child. Stimulant medications are used to effectively manage ADHD. These medications maybe used alone or in combination therapy. Stimulant medication serve to regulate impulsive behaviour and to improve attention span. Side effects include headaches, stomach aches, decreased appetite and nervousness (Quinn 2012).

Antidepressants such as imipramines, desipramines and amitriptyline are an alternative source of medication prescribed for the management of ADHD symptoms. This class of drugs may be used alone or in conjunction with stimulants drugs (Noonan 2010).

Alternative treatments involve a non-pharmacological approach. The psychological approach aims to help ADHD individuals like and accept themselves, as well as to effect ways to learn to cope with their disorder (Hinshaw:undated). Rabiner (2006) describes behavioural therapy as goal setting to increase the frequency of desired behaviour by rewarding the ADHD learner, and allows that inappropriate behaviour yields negative consequences.

Marshall, M (2011) indicates that behavioural therapy should be first line treatment for young children with ADHD. However, behaviour therapy combined with drug therapy is most effective in reducing the symptoms of ADHD. Once symptoms are controlled, they rarely return to previous levels.

It is imperative for a relationship to exist between parents and educators, in order to manage the treatment interventions and support the learner.

#### **2.4 THE EFFECT OF ADHD ON A LEARNER'S CLASSROOM SKILLS.**

Due to neurological abnormalities, ADHD children have impaired functioning in multiple settings such as home, school and relationships. Within the classroom there are two categories of the learner's skills that are affected by the disorder. The first being developmental skills which deal with aspects such as memory, attention, visual and auditory perceptions and language as well as the gross motor, fine motor and sensorimotor skills. The second category is academic skills which include cognition, reading, spelling, writing and mathematics.

## **2.4.1 DEVELOPMENTAL SKILLS**

### **2.4.1.1 GROSS MOTOR, FINE MOTOR AND SENSORI MOTOR SKILLS**

Gross motor skills refer to the bodily movements on a larger scale. It requires whole body participation. An example of this skill is jumping and running. ADHD learners are often reluctant to take part in such activities. This reluctance is sometimes misinterpreted as the cause of the problem. They are even seen as untidy and careless, even though they may be trying hard not to be (Hogg & Raynes 1987:134).

Fine motor skills refer to the intricate muscular movements of an individual such as the control of muscles in the hands that are required for writing. Some learners with ADHD find it difficult to colour in drawings, to write, to fit a piece of a puzzle, to make use of a scoop, to move an object from one point to another and to thread beads together to form a chain (Plymouth 2008).

In comparison to gross and fine motor skills, sensorimotor skills refer to the awareness of the individual's body to the surroundings as well as balance and rhythm.

### **2.4.1.2 VISUAL PERCEPTIONS**

An ADHD learner with visual difficulties may have entirely normal eyesight, but may lack the ability to interpret what he or she sees. One must distinguish between 'seeing' and 'looking', as they greatly differ. 'Seeing' is a physiological process which requires the mechanisms of the eye and visual cortex to be intact and operational, whereas 'looking' is a psychological process which involves interpretation of the visual stimulus (Hogg & Raynes 1987:144).

A significant relationship between visual perceptual ability and achievement in reading, arithmetic and spelling exists. In most cases, the learner experiencing problems with visual perceptions may present with characteristics such as excessive rubbing of the eyes, blinking more than usual, confusing numbers and letters, inflamed and watery eyes, drooping eyelids, complaints of burning, scratchy feeling in the eyes or blurred vision (Landsberg 2006:337).

#### **2.4.1.3 AUDITORY PERCEPTIONS**

ADHD children might be able to hear perfectly, but have difficulty interpreting or remembering information. Because of this, learners are unable to follow through on complex instructions. Educators in the classroom need to ensure that the learner can clearly see his/her mouth movements in order to help them receive instructions (Landsberg 2006:358-359).

#### **2.4.1.4 MEMORY**

Memory that is used in everyday classroom life is known as working memory. The competence of working memory clearly depends on the learner's level of attention. Therefore it is clear that memory and attention work hand in hand.

In the case of the ADHD learner, attention is a problem. Learners seem unfocused at times, and find it difficult to pay attention which in turn affects the learner's working memory. These learners may be slow to progress academically.

In order to assess the working memory of an ADHD learner, the educator may employ a direct technique of testing known as the Working Memory Index (WMI). The WMI encompasses tasks that allow professionals to assess the working memory of ADHD learners. Tasks include forward and backward digit span (mental storing of digits and their sequence) or letter number sequencing (mental storing of letters and their sequence) (Gathercole:2008).

#### **2.4.1.5 ATTENTION**

For an ADHD child, maintaining attention becomes a problem. An ADHD learner, stimulated by many learning resources, finds it difficult to remain focused on a lesson. This inability to focus impacts on the learner's working memory, thus impacting on his/her academic performance (Chapman 2003). An ADHD-knowledgeable educator would be more easily able to structure lessons to assist with developing attention by:

- Assisting ADHD learners to organise their work, so as to be more interested in their work
- Seat ADHD learners close to the educator to minimise distraction by other learners.
- Structure lessons and make use of various resources.
- Praise the ADHD learner for any success.
- Encourage the ADHD learner to work accurately.
- Involve ADHD learners in the lesson (Landsberg 2006:373).



#### **2.4.1.6 LANGUAGE**

Language may seem very easy to learn, as one is raised with it. However, language may be distinguished into mother tongue language, where an individual learns to speak the language from an early age according to culture and influences and acquired language in which an individual generally acquires a new language in a classroom or academic setting.

However, in many schools within South Africa, the language of teaching and learning (LoTL) does not coincide with the mother tongue language of many learners. This can create a catastrophic impact on their academic results. An ADHD learner may experience problems with any number, if not all of the components of language listed below (Keith:undated):

- a) Phonology: Dealing with vowels and consonants.
- b) Morphology: Involving word formation.
- c) Syntax (grammar): The rules governing sentence structure.
- d) Semantics: The meaning of sentences.
- e) Pragmatics: The study of context

#### **2.4.1.7 SOCIAL COMPETENCE**

An ADHD child tends to demonstrate disturbing behaviour at times. This behaviour may impact on the child's social life. The child may be impatient, impulsive, and aggressive or may interrupt conversations in order to obtain full attention of peers and family members. However, this type of behaviour may be miscommunicated or may cause frustration (Landsberg 2006:101).

## **2.4.2 ACADEMIC SKILLS**

### **2.4.2.1 COGNITION**

ADHD learners present with a number of factors in the classroom. Some ADHD learners may function below average, some average and some brilliantly in terms of their academic abilities. Although ADHD learners present with inattentiveness, impulsivity and some aggression, there are underlying factors that affect their academic abilities. According to Piaget in Wadsworth (1978) cognition may be broken down into different levels: Concrete Operational, Formal Operational and Pre-operational. By identifying the ADHD learner's ability within each of Piaget's levels of cognition, it is possible to determine level of functioning of the learner.

### **2.4.2.2 READING**

The ability to read, spell or make use of phonics clearly lies in the arena of language skills. As discussed earlier, language proficiency is dependent on the learner's attention span and working memory competency. An ADHD child may find it difficult to pay attention to fine detail or to retain enough to put it to use. The use of simple exercises in the classroom can assess the learner's reading competency. Simple prose reading would allow the educator to determine the accuracy of word recognition, as well as comprehension skills (Schonell 1965:37-53).

### **2.4.2.3 SPELLING**

Spelling is yet another part of language skills. Here again, if the basics of language acquisition is not grasped then spelling may present as a problem. Spelling makes use of rules and structured patterns. Educators can assess a learner's spelling competency by very simply reading through summaries or essays. Educators must encourage their learners to proofread their work, as well as to apply rules for spelling (Hodge:2000).

### **2.4.2.4 WRITING**

The process of writing requires fine motor actions. An ADHD learner may experience problems with fine motor skills, and this may impact on his/her ability to write. Writing difficulties impact on academic achievement or daily living (Marzola:undated). Educators should ensure that a reference chart is available in the classroom to support identification of letter styles (Hodge: 2000).

### **2.4.2.5 MATHEMATICS**

As an ADHD learner has a short attention span which results in poor working memory and difficulty in understanding instructions, the learner might have problems solving mathematical problems. ADHD learners would find it difficult to interpret word problems or process the arithmetical problems presented. The educator not only needs to assess the learner's competency in computation of mathematical equations, but also their comprehension of mathematical problems. Skills such as perception, memory and sequencing need to be stimulated. Learners must be encouraged to check their answers after calculations, as well as to talk their way through mathematical problems (Hodge:2000).

## **2.5 TEACHING STRATEGIES TO ACCOMMODATE THE ACADEMIC NEEDS OF ADHD LEARNERS**

Educators within inclusive education must be able to identify the barriers to learning presented to learners with ADHD as listed earlier. These educators should be able to adjust factors such as classroom management, learning activities and degrees of observation that affect the learning process. A point to note regarding classroom management is the educator centred accommodation of ADHD learners (Flick 1998:51-56). This entails having a good knowledge and understanding of ADHD, while also being flexible in responding to the needs of the learner and providing structure and routine. He also refers to the use of technology and media to enhance the learning process, which is important when selecting resources as teaching strategies.

Kizlik (2011) describes strategic teaching as aiming to foster thinking amongst learners while learning. This can be accomplished by an educator who employs the use of variables of instruction, which includes any factor that can influence the teaching and learning process, such as learner characteristics, curriculum content or management of the classroom (p.2-3). This adjustment will impact on the selection of appropriate teaching strategies to ensure the academic success of the ADHD learner.

Larrivee (1985) in Sakarneh (undated) describes the characteristics of an educator effective in selecting the appropriate teaching strategies as one who uses time efficiently and in general provides support for learners with or without disabilities (p.2). While according to Westwood (1995) in Sakarneh (undated:8), an effective educator is one who is enthusiastic, uses a variety of teaching and resource styles whilst focusing on academic skills and also frequently observes learners while taking into account differences between learners. Therefore in order for teaching to be effective, an educator must ensure that there is clarity, instructional variety, educator task orientation,

engagement in the learning process and learner success rate (Sakarneh, undated: 1).

A learning activity is a part of the teaching and learning process and must be incorporated into the teaching strategy. Clark and Starr (1996:173) mention that for the appropriate teaching and learning activities to be selected, the educator must ensure that the activity builds concepts about the content, clarifies ideas surrounding the topic of learning, demonstrates activities to apply the content learnt, changes attitudes about concepts in the content, motivates learners to think and participate and evaluates learner performance in the activity. If selected and used properly, an appropriate teaching strategy as an academic intervention for ADHD learners can serve as a proactive or preventative measure for behavioural problems (DuPaul 2007:188).

A study conducted on Grade 6 learners by Stears and Gopal (2010), found that the use of interpretive and interactive approaches to teaching and learning helped learners to achieve certain outcomes over and above that of the learning area. These learners became confident, which led to an affirming and nurturing ethos in the classroom amongst learners. They also found that learners showed interest in activities that applied to their environment. Jarmin (1996) in Kos, Richdale et al (2006) emphasises that ADHD learners will perform better in response to curricula that are altered to suit their needs. The adaption of curricula to accommodate ADHD learners will be fruitful, if the educator has basic knowledge of ADHD (p.155). This is supported by Atkinson et al (1997) in Kos and Richdale et al (2006), who state that educators tend to show greater structure and detail in lesson plans when employing teaching strategies to accommodate an ADHD learner. There are a number of teaching strategies which incorporate learning strategies for not only the ADHD learner but for whole class development. Educators need to be mindful and skilful when selecting an appropriate, yet effective teaching strategy (p.150).

### **2.5.1 CO-OPERATIVE TEACHING STRATEGY**

Co-operative learning as a teaching strategy is described as an instructional strategy in which small groups of learners work together on a common task (Pearson Education:2012). This strategy serves to improve motivation and self-esteem within the ADHD learner.

Vygotsky (1978) in Abdulkarim and Jadiry (2012) states that people do not learn in isolation, but learn and work co-operatively throughout their lives. This leads to the social construction of knowledge (p.556). Therefore learning should not be any different within the classroom. ADHD learners should be given the opportunity to share responsibility, to listen and be listened to. Johnson & Holubec (1993) in Abdulkarim and Jadiry (2012), indicate five definitive characteristics of a successful co-operative teaching strategy:

- 1) Positive interdependence
- 2) Individual accountability
- 3) Face to face interaction
- 4) Group processing
- 5) Development of small group interpersonal skills (p.557).

This teaching strategy would assist the ADHD learner to overcome barriers to learning such as poor auditory perception; poor visual perception and poor working memory and attention. It would clearly develop social competence.

### **2.5.2 DEMONSTRATIONS AS A TEACHING STRATEGY**

In the present day, where technology provides endless possibilities, the use of multimedia presentations can result in more successful teaching outcomes.

Demonstrations allow the educator many options such as PowerPoint presentations which is an example of an audio-visual teaching aid. This would allow the auditory learner to focus on the spoken word instead of the written

whilst the visual learner would focus on the graphical portrayals of the spoken or written word (Byk:undated).

Visual aids such as charts, models or apparatus add impact and interest to lessons whilst increasing a learner's retention level (Murtaza, Mustaq et al 2012:417-418). It is clear that this form of teaching strategy would assist ADHD learners to overcome barriers to learning such as poor visual perceptions, poor auditory perceptions, poor attention and related working memory.

### **2.5.3 WHOLE CLASS DISCUSSIONS**

This teaching strategy generally entails a lot of noise and at times it appears as if there is a lack of educator control. However, whole class discussions tend to bring out the debater in many learners. According to Larson (1997) and Wileen & White (1991) in Hartman (undated), whole class discussions can be defined as a teaching strategy which entails a structured conversation amongst those who present, examine, compare and understand ideas about an issue. The aim of this strategy is to incorporate and combine the knowledge that already exists within each learner with that of all other learners in the discussion, with some guidance from the educator. This strategy therefore assists with language development skills, attention and the related working memory of the ADHD learner (p.2).

### **2.5.4 EVALUATION OF TEACHING STRATEGIES**

In order to determine which teaching strategy is successful for a specific group of learners and specific content to be learnt, an educator may employ an assessment strategy. The most common, yet effective assessment technique is that of observation. This technique allows the educator to observe whether the learner is developing necessary skills, achieving the outcomes or struggling with the learning tasks.

Therefore an assessment task serves to determine which teaching strategies are effective, improves classroom practice and the curriculum plan and also serves to evaluate a learner's performance (Badders:2000).

Assessment tasks are categorised into:

- Baseline assessments which assess prior knowledge upon which to introduce and build new knowledge,
- Formative assessments which comprise continuous informal assessments serving to monitor the progress of teaching and learning of a unit.
- Summative assessments which are administered after the teaching process is almost completed, to indicate how well the content has been learnt (Curzon 2004:384).

To ensure a successful assessment procedure, the educator must, prior to employing any method of assessment, ensure that the assessment task meets the criteria of the principles of assessment. An assessment procedure which is clear; relevant; bias free; sensitive to diversities; varied; able to identify the barrier to learning in order to develop support structures for the learner and that is continuous over a period of time in order to ensure conclusion would have satisfied the principles of assessment and should prove successful (Department of Basic Education 2009:27-28).

## **2.6 EFFICACY OF EDUCATOR ADHD KNOWLEDGE IN THE CLASSROOM**

Educators are considered to be a valuable source of information regarding the behaviours of learners. This information is especially important when healthcare professionals are diagnosing children with ADHD. The problem arises when educators have inadequate knowledge about the characteristics of ADHD and therefore cannot fulfil their duty to refer learners for assessment. Ohan, Cormier et al (2008) state that educators lacking knowledge of ADHD may fail to notice warning signs of the disorder, and that



their poor knowledge will also impact on the support that a treatment regime for a diagnosed learner requires. In their study conducted on elementary school educators by means of a survey, they found that educators with high and average knowledge of ADHD reported more helpful behaviours and perceptions, but predicted more disruptive behaviour from the ADHD learners. The latter represented their lack of confidence to manage the learners (p.437).

Due to the prevalence of ADHD there has been an increase in the number of studies undertaken to determine the degree of educators' knowledge of ADHD and the effect of this knowledge or lack thereof on support for the ADHD learner. Educators need to be exposed to in-service courses regarding ADHD and its diagnosis, symptoms and management by means of drug and non-drug therapies. Jones and Chronis-Tuscano (2008) investigated the effect of in-service training on randomly selected educators from mainstream and special education schools. They exposed the educators to brief in-service training regarding interventions for ADHD and support of treatment by the educator. Post in-service intervention test results showed an increase in ADHD knowledge among these educators. As a result of the in-service training special education educators increased their use of behavioural modification techniques.

The assessment of educator knowledge will also be indicative of their awareness of warning signs or characteristics pertaining to learning disorders for referral purposes. Weylandt, Schepman et al (2009) conducted an investigation to determine the ADHD knowledge level of educators and school psychologists by means of a questionnaire on treatment and possible causes of ADHD. Their results showed that school psychologists had a greater knowledge base as compared to special education and general educators. However, special education educators did not have a greater level of ADHD knowledge as compared to general educators. Their results also indicated that

increased years of experience did not correlate with increased ADHD knowledge.

ADHD knowledge scales have been developed by many researchers but the most commonly used scales are those developed by Jerome (1994) and Sciutto et al (2000) (Legato: 2011:4). The current study will employ the ADHD knowledge scale by Sciutto & Fedhamer (2000) known as Knowledge of Attention Deficit Disorders Scale (KADDS).

The results of an investigation conducted by Vereb & DiPerna (2004) showed that there were positive correlations between ADHD knowledge and years of experience teaching ADHD learners together with training relating to teaching ADHD learners. They also found that ADHD training showed a positive correlation with knowledge and acceptability of behaviour management therapy within the classroom. The educator may be responsible for accepting an intervention as part of the treatment plan for the learner after referral for assessment. Eckert and Hintze (2000:421) and Wilson & Jennings (1996) in Vereb & DiPerna (2004) indicated that the effectiveness of a treatment plan may be comprised if the educator refuses to implement the intervention; the intervention is implemented incorrectly or if the intervention is incomplete. Therefore is important to note that ADHD knowledge is only meaningful when put into practice for the benefit of the learner.

### **3. CONCLUSION**

In this chapter, the researcher had provided information regarding the intellectual learning barrier, Attention Deficit Hyperactivity Disorder (ADHD). The diagnosis, causes, symptoms and treatment of the disorder has been well explained and as been linked to educators having basic knowledge of the condition in order to accommodate ADHD learners in the classroom. Broader information regarding the effect of ADHD on a learner's academic and developmental skills in the classroom as well as suggestions to accommodate

these learning barriers are provided. The researcher then focused on teaching strategies to accommodate the needs of the ADD learner in the classroom by elaborating on three teaching strategies among others. A relationship was then established between the need for educators to have knowledge of ADHD prior to the teaching, and the learning process of ADHD learners. Reference is made to the impact of ADHD knowledge on educator perceptions of these learners as well as how knowledge of this disorder can impact effectively on the selection of appropriate teaching support strategies.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 INTRODUCTION**

Quantitative research methodology was used as a means to gather and analyse data within the research study. Flexibility of research methodology was observed by random sampling of educators. This allowed for the selection of educators based on the important information they can provide, against a criteria. This form of research involves the general measurement or correlation of the relationships between subjects, and relies heavily on numbers in reporting results (McMillan & Schumacher 2006:149). Thereafter, descriptive analysis of the statistical information gathered would allow the researcher to reach conclusions.

### **3.2 RESEARCH DESIGN**

The study was carried out by employing a survey approach. The researcher made use of standardised structured questionnaires as the data collection instrument. Questions within the questionnaire pertained to the respondents' demographics and their knowledge of ADHD. The questionnaire was administered to the respondents at their work establishment; permission given by the Kwa-Zulu Natal Department of Education and the principals of these schools.

#### **3.2.1 THE RESEARCH SITE**

The researcher conducted the quantitative research design within two randomly selected government secondary schools within the Durban Central Circuit within the Umlazi District of the eThekweni Municipality in KwaZulu Natal, in South Africa. The researcher selected these sites because of the prevalence of learners on ADHD stimulant medication and those presenting with ADHD symptoms (mostly diagnosed but not on drug therapy).

### **3.2.2 SAMPLING**

By means of random sampling the researcher selected the sample respondents. The sample population was defined as educators who are currently teaching in mainstream government secondary schools and conform to the following characteristics of the sampling frame:

1. Possess an NQF teaching qualification.
2. Teaching in the GET phase or FET phase or both GET and FET phase.

Twenty educators conforming to the characteristics of the sampling frame (ten educators from each of two secondary schools) were randomly selected from a sample population of approximately eighty educators. Teddlie and Yu (2007), describe random sampling as that in which each sample subject from the population has an equal chance of inclusion in a research design based on specific criteria (p.79).

### **3.3 DATA COLLECTION**

The method of data collection was means of a survey posed to the sample respondents within their working environment. Permission was sought from the Kwa-Zulu Natal Department of Education and principals of the randomly selected secondary schools. The data collection instrument was a questionnaire which was made up of two parts; the first regarding the respondents' demographics such as their personal background details, the school name and related information, and the second regarding their knowledge of ADHD. The latter entailed four subscales: associated features; symptoms/diagnosis; treatment and teaching support strategies. The data collection instrument was based on the Knowledge of Attention Deficit Disorder Scale (KADDS) developed by Scituito, Fedhamer et al (2000), which was adapted to include questions regarding teaching support strategies.

### **3.4.1 DATA ANALYSIS**

Data analysis techniques were carried out by means of a descriptive analysis technique. The data collected during the completion of the questionnaires were scored according to the scoring procedure and then categorised into the four subscales for descriptive analysis. The analysis dealt with statistically analysing scores of the responses to the questions posed. Questions (in the form of statements) were answered by means of selecting a 'True', 'False' or 'Don't know' alternative which were provided on the questionnaire. Scores were represented in the form of tables and conclusions were reached based on the data presented.

### **3.4.2 VALIDITY AND RELIABILITY**

Validity is defined as the degree to which interpretations of data have mutual meaning\ s between participants and researchers (McMillan & Schumacher:2006:324-326), whilst Makhado (2002) describes validity as the degree to which scientific phenomena match the realities of the world (p.116). Reliability however, is described by Gall, Borg et al (1996) as the researcher having a thorough understanding of what is to be observed and making use of proper recording tools (p.338-339), whilst Silverman in Makhado (2002) describes reliability as the findings of the research being free of any accidental circumstances (p.118).

The quantitative research design used, made use of random sampling, which served to achieve comparability across different subscales (Teddle & Yu:2007:80-81). In order to ensure the validity of the quantitative research design, the researcher would ensure that items on the questionnaire were clear and relevant for uniform interpretation, that respondents were competent to complete the questionnaire and that items on the questionnaire were bias free (Babbie (1998) in McMillan & Schumacher 2006:194-195).

### **3.4.3 ETHICAL CONSIDERATIONS**

#### Anonymity and Confidentiality

Sample respondents were not required to fill in their names, but were allocated a number relating to the school they taught in. In this way, anonymity and confidentiality of the sample respondents were upheld.

#### Informed consent

Permission was first sought from the Kwa-Zulu Natal Department of Education to conduct the research study within secondary schools in the Durban Central Circuit of the Umlazi District. Once granted, permission was then sought from the principals of the two randomly selected secondary schools to conduct the research study at these establishments by administering the questionnaires to the randomly selected respondents.

### **3.5 CONCLUSION**

In this chapter, the researcher outlined the research methodology to be employed in the research study. A distinction was made between the data collection and data analysis techniques. The sampling and data analysis techniques were explained.

## CHAPTER FOUR: PRESENTATION AND DISCUSSION OF RESULTS

### 4.1 INTRODUCTION

The data obtained through the data collection process of administering questionnaires was analysed by categorising the responses into 'True', 'False' and 'Don't know' for each question and subscale in order to reach conclusions. Descriptive analysis allowed for explanations to be conveyed as a result of analysing the data statistically. The data collected are represented in this chapter in the form of tables.

### 4.2 DEMOGRAPHIC PROFILE OF SAMPLE RESPONDENTS

Tables 1 to 7 below represent the demographic profile of the respondents of the study. These respondents were randomly selected from the two sample secondary schools.

**Table 1: Gender of respondents**

| <b>Gender</b> | <b>Number of respondents</b> | <b>% of respondents</b> |
|---------------|------------------------------|-------------------------|
| Male          | 04                           | 20                      |
| Female        | 16                           | 80                      |
| Total         | 20                           | 100                     |

As a result of random sampling there were four male respondents, which made up 20% of the total, as compared to the sixteen female respondents.



**Table 2: Age ranges of respondents**

| <b>Age Ranges</b> | <b>Number of respondents</b> | <b>% of respondents</b> |
|-------------------|------------------------------|-------------------------|
| < 30 years old    | 03                           | 15                      |
| 30 – 40 years old | 08                           | 40                      |
| 41 – 50 years old | 06                           | 30                      |
| 51 – 60 years old | 02                           | 10                      |
| > 60 years old    | 01                           | 05                      |
| Total             | 20                           | 100                     |

The table represents a range of age groups of the respondents. Majority of the respondents were in the 30 – 40 years old age group, while the least number is in the age group greater than 60 years of age.

**Table 3: Years of teaching experience of respondents**

| <b>Years of teaching experience</b> | <b>Number of respondents</b> | <b>% of respondents</b> |
|-------------------------------------|------------------------------|-------------------------|
| 1 – 5 years                         | 04                           | 20                      |
| 6 – 10 years                        | 03                           | 15                      |
| 11 – 20 years                       | 09                           | 45                      |
| 21 – 30 years                       | 03                           | 15                      |
| 31 – 40 years                       | 01                           | 05                      |
| Total                               | 20                           | 100                     |

45% of the respondents have 11- 20 years teaching experience, while fewer respondents have teaching experience above 20 years or below 11 years (20% and 35% respectively).

**Table 4: Grades taught by respondents**

| <b>Grades taught</b>              | <b>Number of respondents</b> | <b>% of respondents</b> |
|-----------------------------------|------------------------------|-------------------------|
| GET phase<br>Grades 8 – 9         | 01                           | 05                      |
| FET phase<br>Grades 10 – 12       | 02                           | 10                      |
| GET & FET phases<br>Grades 8 – 12 | 17                           | 85                      |
| Total                             | 20                           | 100                     |

85% of respondents taught grades across the GET and FET phases, while 10% were limited to teaching grades within the FET phase only and 5% were limited to teaching grades within the GET phase only.

**Table 5: Representation of whether respondents are professionally qualified or not.**

| <b>Professionally Qualified?</b> | <b>Number of respondents</b> | <b>% of respondents</b> |
|----------------------------------|------------------------------|-------------------------|
| Yes                              | 20                           | 100                     |
| No                               | 0                            | 0                       |
| Total                            | 20                           | 100                     |

All respondents are professionally qualified, possessing an NQF (National Qualifications Framework) teaching qualification.

**Table 6: Acknowledgement of teaching learners with ADHD.**

| <b>Acknowledged teaching an ADHD learner?</b> | <b>Number of respondents</b> | <b>% of respondents</b> |
|---|------------------------------|-------------------------|
| Yes   | 19                           | 95                      |
| No  | 01                           | 05                      |
| Total   | 20                           | 100                     |

95% of respondents have acknowledged teaching an ADHD learner in their years of teaching experience.

**Table 7: Attendance of respondents to formal ADHD knowledge training.**

| <b>Attendance to formal ADHD knowledge training.</b> | <b>Number of respondents</b> | <b>% of respondents</b> |
|--|------------------------------|-------------------------|
| ADHD in-service training                             | 01                           | 05                      |
| ADHD seminars  | 01                           | 05                      |
| ADHD workshops                                       | 00                           | 00                      |
| None   | 18                           | 90                      |
| Total  | 20                           | 100                     |

Only 2 respondents received formal ADHD knowledge, one through an ADHD seminar and the other through an ADHD in-service course. The majority of the respondents (90%) had never attended any courses that would allow them to gain baseline knowledge about ADHD. All respondents were professionally qualified and taught in the either the GET phase only, FET phase only or in both the GET and FET phases. This now rendered all answered questionnaires valid for analysis of the ADHD knowledge scale as all sample respondents conformed to the sampling frame.

### 4.3 PRESENTATION AND DISCUSSION OF RESULTS OF THE DATA COLLECTION PROCESS

Once data was collected it was immediately scored according to the number of responses of 'True', 'False' or 'Don't know' to each statement by the twenty respondents as represented in Table 8 below.

**Table 8: Analysis of responses to questions**

| Question Number | Number of Respondents |    |       |    |            |    |         |
|-----------------|-----------------------|----|-------|----|------------|----|---------|
|                 | TRUE                  | %  | FALSE | %  | DON'T KNOW | %  | TOTAL % |
| 1               | 6                     | 30 | 1     | 5  | 13         | 65 | 100     |
| 2               | 5                     | 25 | 10    | 50 | 5          | 25 | 100     |
| 3               | 13                    | 65 | 2     | 10 | 5          | 25 | 100     |
| 4               | 3                     | 15 | 10    | 50 | 7          | 35 | 100     |
| 5               | 3                     | 15 | 8     | 40 | 9          | 45 | 100     |
| 6               | 1                     | 5  | 3     | 15 | 16         | 80 | 100     |
| 7               | 3                     | 15 | 9     | 45 | 8          | 40 | 100     |
| 8               | 6                     | 30 | 4     | 20 | 10         | 50 | 100     |
| 9               | 18                    | 90 | 1     | 5  | 1          | 5  | 100     |
| 10              | 14                    | 70 | 3     | 15 | 3          | 15 | 100     |
| 11              | 8                     | 40 | 7     | 35 | 5          | 25 | 100     |
| 12              | 3                     | 15 | 9     | 45 | 8          | 40 | 100     |
| 13              | 16                    | 80 | 0     | 0  | 4          | 20 | 100     |
| 14              | 6                     | 30 | 6     | 30 | 8          | 40 | 100     |
| 15              | 8                     | 40 | 1     | 5  | 11         | 55 | 100     |
| 16              | 16                    | 80 | 0     | 0  | 4          | 20 | 100     |
| 17              | 9                     | 45 | 3     | 15 | 8          | 40 | 100     |
| 18              | 3                     | 15 | 9     | 45 | 8          | 40 | 100     |
| 19              | 6                     | 30 | 6     | 30 | 8          | 40 | 100     |
| 20              | 13                    | 65 | 2     | 10 | 5          | 25 | 100     |
| 21              | 10                    | 50 | 4     | 20 | 6          | 30 | 100     |
| 22              | 3                     | 15 | 8     | 40 | 9          | 45 | 100     |
| 23              | 16                    | 80 | 0     | 0  | 4          | 20 | 100     |
| 24              | 1                     | 5  | 12    | 60 | 7          | 35 | 100     |
| 25              | 3                     | 15 | 6     | 30 | 11         | 55 | 100     |
| 26              | 14                    | 70 | 3     | 15 | 3          | 15 | 100     |
| 27              | 7                     | 35 | 2     | 10 | 11         | 55 | 100     |
| 28              | 3                     | 15 | 8     | 40 | 9          | 45 | 100     |
| 29              | 2                     | 10 | 4     | 20 | 14         | 70 | 100     |
| 30              | 5                     | 25 | 4     | 20 | 11         | 55 | 100     |
| 31              | 14                    | 70 | 4     | 20 | 2          | 10 | 100     |
| 32              | 13                    | 65 | 3     | 15 | 4          | 20 | 100     |
| 33              | 10                    | 50 | 8     | 40 | 2          | 10 | 100     |
| 34              | 12                    | 60 | 3     | 15 | 5          | 25 | 100     |
| 35              | 2                     | 10 | 2     | 10 | 16         | 80 | 100     |
| 36              | 4                     | 20 | 10    | 50 | 6          | 30 | 100     |
| 37              | 18                    | 90 | 1     | 5  | 1          | 5  | 100     |
| 38              | 14                    | 70 | 4     | 20 | 2          | 10 | 100     |
| 39              | 3                     | 15 | 15    | 75 | 2          | 10 | 100     |
| 40              | 10                    | 50 | 4     | 20 | 6          | 30 | 100     |
| 41              | 12                    | 60 | 5     | 25 | 3          | 15 | 100     |
| 42              | 3                     | 15 | 9     | 45 | 8          | 40 | 100     |
| 43              | 4                     | 20 | 11    | 55 | 5          | 25 | 100     |

The table represents responses from respondents to each question of the questionnaire (Appendix D). The researcher observed that more than 10% of the twenty respondents responded with the alternative 'Don't Know' in 37 statements out of the 43 statements. This is indicative of a low level of knowledge and self confidence with regards to the disorder and teaching strategies.

From the table the research statistically established that uncertainty lay within the treatment of ADHD and general knowledge of ADHD. This is supported by 80% of respondents that selected the 'Don't Know' alternative to questions such as acknowledging the prevalence of ADHD in parents as compared to the general public or determining the effectiveness of shock therapy to treat ADHD. Other observations include the uniformity of knowledge regarding the symptoms and diagnosis of ADHD. Respondents acknowledged that ADHD was not age specific as 80% of respondents agreed that an adult could be diagnosed with ADHD and also selected the 'True' alternative regarding the symptoms of ADHD being inattention and hyperactivity/impulsivity.

As a result of the above statistical analysis, the researcher then categorised the responses into the four subscales which were established prior to administering the data collection tool. The responses to each statement that made up a subscale were tabulated. The four categories or subscales established were associated features of ADHD; symptoms/diagnosis of ADHD; treatment of ADHD and teaching and support strategies.

The percentage of responses gathered indicates no uniformity in the responses to the questions posed about ADHD. This is true for all respondents. The majority of the respondents seem to have their own ideas and perceptions of the disorder and this according to Glass & Wegar (2000); Kos et al (2006) in Legato (2010:1-2) would affect their behaviour towards ADHD learners.

## SUBSCALE ONE: ASSOCIATED FEATURES OF ADHD

**Table 9: Responses to questions within the Associated Features of ADHD subscale.**

| Question Number | Number of Respondents |    |       |    |            |    |         |
|-----------------|-----------------------|----|-------|----|------------|----|---------|
|                 | TRUE                  | %  | FALSE | %  | DON'T KNOW | %  | TOTAL % |
| 1               | 6                     | 30 | 1     | 5  | 13         | 65 | 100     |
| 4               | 3                     | 15 | 10    | 50 | 7          | 35 | 100     |
| 6               | 1                     | 5  | 3     | 15 | 16         | 80 | 100     |
| 13              | 16                    | 80 | 0     | 0  | 4          | 20 | 100     |
| 17              | 9                     | 45 | 3     | 15 | 8          | 40 | 100     |
| 19              | 6                     | 30 | 6     | 30 | 8          | 40 | 100     |
| 22              | 3                     | 15 | 8     | 40 | 9          | 45 | 100     |
| 24              | 1                     | 5  | 12    | 60 | 7          | 35 | 100     |
| 27              | 7                     | 35 | 2     | 10 | 11         | 55 | 100     |
| 28              | 3                     | 15 | 8     | 40 | 9          | 45 | 100     |
| 29              | 2                     | 10 | 4     | 20 | 14         | 70 | 100     |
| 30              | 5                     | 25 | 4     | 20 | 11         | 55 | 100     |
| 31              | 14                    | 70 | 4     | 20 | 2          | 10 | 100     |
| 32              | 13                    | 65 | 3     | 15 | 4          | 20 | 100     |
| 33              | 10                    | 50 | 8     | 40 | 2          | 10 | 100     |

The table represents the actual number of respondents that responded to a question by means of 'TRUE'; 'FALSE' or 'DON'T KNOW'. This number was then converted to and represented as a percentage.

The responses indicate merely the perceptions of the respondents; the researcher's scoring guide indicates the most likely alternative that should have been selected for each question. Therefore, respondents on the whole lacked sufficient knowledge with regards to the general features of ADHD and acknowledged certain myths surrounding ADHD.

## SUBSCALE TWO: SYMPTOMS/ DIAGNOSIS OF ADHD

**Table 10: Responses to questions within the Symptoms/ Diagnosis of ADHD subscale.**

| Question Number | Number of Respondents |    |       |    |            |    |         |
|-----------------|-----------------------|----|-------|----|------------|----|---------|
|                 | TRUE                  | %  | FALSE | %  | DON'T KNOW | %  | TOTAL % |
| 3               | 13                    | 65 | 2     | 10 | 5          | 25 | 100     |
| 5               | 3                     | 15 | 8     | 40 | 9          | 45 | 100     |
| 7               | 3                     | 15 | 9     | 45 | 8          | 40 | 100     |
| 9               | 18                    | 90 | 1     | 5  | 1          | 5  | 100     |
| 11              | 8                     | 40 | 7     | 35 | 5          | 25 | 100     |
| 14              | 6                     | 30 | 6     | 30 | 8          | 40 | 100     |
| 16              | 16                    | 80 | 0     | 0  | 4          | 20 | 100     |
| 21              | 10                    | 50 | 4     | 20 | 6          | 30 | 100     |
| 26              | 14                    | 70 | 3     | 15 | 3          | 15 | 100     |

Within this subscale an average of 27% of respondents selected the 'Don't know' alternative per question as compared to an average of 42% of respondents that selected the same option in the previous subscale. This is indicative of respondents having some idea of the symptoms/diagnosis of the disorder, despite whether their response was the expected response or not.

Statistically 40% of respondents were unsure about the destructive and illegal behaviour displayed by ADHD children. 90% of respondents acknowledged that ADHD learners are characterised by fidgeting or squirming in their seats; whilst 45% of respondents agreed that ADHD children are not physically cruel to others. Within this subscale it is evident that majority of the respondents were able to distinguish between fact and myth regarding the symptoms/diagnosis of ADHD.

### SUBSCALE THREE: TREATMENT OF ADHD

**Table 11: Responses to questions within the Treatment of ADHD subscale.**

| Question Number | Number of Respondents |    |       |    |            |    |         |
|-----------------|-----------------------|----|-------|----|------------|----|---------|
|                 | TRUE                  | %  | FALSE | %  | DON'T KNOW | %  | TOTAL % |
| 2               | 5                     | 25 | 10    | 50 | 5          | 25 | 100     |
| 8               | 6                     | 30 | 4     | 20 | 10         | 50 | 100     |
| 10              | 14                    | 70 | 3     | 15 | 3          | 15 | 100     |
| 12              | 3                     | 15 | 9     | 45 | 8          | 40 | 100     |
| 15              | 8                     | 40 | 1     | 5  | 11         | 55 | 100     |
| 18              | 3                     | 15 | 9     | 45 | 8          | 40 | 100     |
| 20              | 13                    | 65 | 2     | 10 | 5          | 25 | 100     |
| 23              | 16                    | 80 | 0     | 0  | 4          | 20 | 100     |
| 25              | 3                     | 15 | 6     | 30 | 11         | 55 | 100     |
| 34              | 12                    | 60 | 3     | 15 | 5          | 25 | 100     |
| 35              | 2                     | 10 | 2     | 10 | 16         | 80 | 100     |
| 36              | 4                     | 20 | 10    | 50 | 6          | 30 | 100     |

The table represents equalising of responses to questions with regards to the three alternatives provided. 80% of respondents were unsure about the effectiveness of shock therapy to treat severe ADHD (question number 35), whereas shock therapy is not a form of therapy for ADHD individuals. 80% of respondents also agreed that by reducing the dietary intake of sugar (question number 23), ADHD symptoms would be reduced, yet the suggested scoring alternative expected respondents to have selected 'False' as this factor is not considered a cause of ADHD. Although 15% of respondents believed that parent and teacher training regarding the management of an ADHD child cannot be effective without combined drug therapy, 70% believed it was possible (question number 10).



## SUBSCALE FOUR: TEACHING STRATEGIES

**Table 12: Responses to questions within the Teaching strategies subscale.**

| Question Number | Number of Respondents |    |       |    |            |    |         |
|-----------------|-----------------------|----|-------|----|------------|----|---------|
|                 | TRUE                  | %  | FALSE | %  | DON'T KNOW | %  | TOTAL % |
| 37              | 18                    | 90 | 1     | 5  | 1          | 5  | 100     |
| 38              | 14                    | 70 | 4     | 20 | 2          | 10 | 100     |
| 39              | 3                     | 15 | 15    | 75 | 2          | 10 | 100     |
| 40              | 10                    | 50 | 4     | 20 | 6          | 30 | 100     |
| 41              | 12                    | 60 | 5     | 25 | 3          | 15 | 100     |
| 42              | 3                     | 15 | 9     | 45 | 8          | 40 | 100     |
| 43              | 4                     | 20 | 11    | 55 | 5          | 25 | 100     |

An average of 19% of respondents responded with 'Don't Know' to the statements posed. 75% of respondent believed that ADHD learners are the same as other learners and should not receive any additional support through teaching strategies (question number 39). 45% of respondents agreed that developmental skills cannot be accommodated by an educator talks approach(question number 42), while 55% agreed that whole class discussions do assist with the development of skills (question number 43).

An educator talks approach requires learners to listen and understand the content be communicated. Learners do not engage in a whole class discussion or attempt to gain knowledge through cooperative work.

The researcher then compared the responses of the two respondents who has received formal ADHD knowledge training against the eighteen respondents who did not. The aim was to determine whether the two respondents with formal ADHD knowledge would provide better responses than those without formal ADHD knowledge across the scoring per subscale.

The researcher compared the results per subscale and comparatively analysed the tabulated data.

### **SUBSCALE ONE: ASSOCIATED FEATURES OF ADHD**

**Table 13: Responses of respondents without formal ADHD knowledge within subscale one.**

| Question Number | Number of Respondents |           |       |           |            |           |
|-----------------|-----------------------|-----------|-------|-----------|------------|-----------|
|                 | TRUE                  | %         | FALSE | %         | DON'T KNOW | %         |
| 1               | 4                     | <b>22</b> | 1     | <b>6</b>  | 13         | <b>72</b> |
| 4               | 2                     | <b>11</b> | 9     | <b>50</b> | 7          | <b>39</b> |
| 6               | 0                     | <b>0</b>  | 3     | <b>17</b> | 15         | <b>83</b> |
| 13              | 14                    | <b>78</b> | 0     | <b>0</b>  | 4          | <b>22</b> |
| 17              | 8                     | <b>44</b> | 3     | <b>17</b> | 7          | <b>39</b> |
| 19              | 5                     | <b>28</b> | 5     | <b>28</b> | 8          | <b>44</b> |
| 22              | 3                     | <b>17</b> | 7     | <b>39</b> | 8          | <b>44</b> |
| 24              | 1                     | <b>6</b>  | 10    | <b>56</b> | 7          | <b>39</b> |
| 27              | 6                     | <b>33</b> | 2     | <b>11</b> | 10         | <b>56</b> |
| 28              | 2                     | <b>11</b> | 7     | <b>39</b> | 9          | <b>50</b> |
| 29              | 2                     | <b>11</b> | 3     | <b>17</b> | 13         | <b>72</b> |
| 30              | 4                     | <b>22</b> | 3     | <b>17</b> | 11         | <b>61</b> |
| 31              | 12                    | <b>67</b> | 4     | <b>22</b> | 2          | <b>11</b> |
| 32              | 12                    | <b>67</b> | 3     | <b>17</b> | 3          | <b>17</b> |
| 33              | 8                     | <b>44</b> | 8     | <b>44</b> | 2          | <b>11</b> |

**Table 14: Responses of respondents with formal ADHD knowledge within subscale one.**

| Question Number | Number of Respondents |     |       |     |            |    |
|-----------------|-----------------------|-----|-------|-----|------------|----|
|                 | TRUE                  | %   | FALSE | %   | DON'T KNOW | %  |
| 1               | 2                     | 100 | 0     | 0   | 0          | 0  |
| 4               | 1                     | 50  | 1     | 50  | 0          | 0  |
| 6               | 1                     | 50  | 0     | 0   | 1          | 50 |
| 13              | 2                     | 100 | 0     | 0   | 0          | 0  |
| 17              | 1                     | 50  | 0     | 0   | 1          | 50 |
| 19              | 1                     | 50  | 1     | 50  | 0          | 0  |
| 22              | 0                     | 0   | 1     | 50  | 1          | 50 |
| 24              | 0                     | 0   | 2     | 100 | 0          | 0  |
| 27              | 1                     | 50  | 0     | 0   | 1          | 50 |
| 28              | 1                     | 50  | 1     | 50  | 0          | 0  |
| 29              | 0                     | 0   | 1     | 50  | 1          | 50 |
| 30              | 1                     | 50  | 1     | 50  | 0          | 0  |
| 31              | 2                     | 100 | 0     | 0   | 0          | 0  |
| 32              | 1                     | 50  | 0     | 0   | 1          | 50 |
| 33              | 2                     | 100 | 0     | 0   | 0          | 0  |

When comparing the data in Table 13 and Table 14, the researcher clearly noted the distinctive uniformity in the responses of the two respondents with formal ADHD knowledge as compared to the eighteen respondents. Also there were much fewer incidents of the two respondents making use of the 'Don't know' alternative. The two respondents also had a higher incidence of providing the expected responses that the researcher had initially established as per the devised scoring scale. The two respondents have a better general understanding of ADHD compared to the balance of the sample respondents. General understanding of this learning barrier refers to understanding the disorder and identifying the effects on a learner's perception, response and behaviour which is associated with an increased rated of problem behaviour such as withdrawal or aggression (Gaddes & Edgell 1994:254-255).

**SUBSCALE TWO: SYMPTOMS / DIAGNOSIS OF ADHD**

**Table 15: Responses of respondents without formal ADHD knowledge within subscale two.**

| Question Number | Number of Respondents |    |       |    |            |    |
|-----------------|-----------------------|----|-------|----|------------|----|
|                 | TRUE                  | %  | FALSE | %  | DON'T KNOW | %  |
| 3               | 12                    | 67 | 1     | 5  | 5          | 28 |
| 5               | 2                     | 11 | 7     | 35 | 9          | 50 |
| 7               | 2                     | 11 | 8     | 40 | 8          | 44 |
| 9               | 16                    | 89 | 1     | 5  | 1          | 6  |
| 11              | 8                     | 44 | 5     | 25 | 5          | 28 |
| 14              | 5                     | 28 | 5     | 25 | 8          | 44 |
| 16              | 14                    | 78 | 0     | 0  | 4          | 22 |
| 21              | 10                    | 56 | 4     | 20 | 6          | 33 |
| 26              | 12                    | 67 | 3     | 15 | 3          | 17 |

**Table 16: Responses from respondents with formal ADHD knowledge within subscale two.**

| Question Number | Number of Respondents |     |       |     |            |   |
|-----------------|-----------------------|-----|-------|-----|------------|---|
|                 | TRUE                  | %   | FALSE | %   | DON'T KNOW | % |
| 3               | 1                     | 50  | 1     | 50  | 0          | 0 |
| 5               | 1                     | 50  | 1     | 50  | 0          | 0 |
| 7               | 1                     | 50  | 1     | 50  | 0          | 0 |
| 9               | 2                     | 100 | 0     | 0   | 0          | 0 |
| 11              | 0                     | 0   | 2     | 100 | 0          | 0 |
| 14              | 1                     | 50  | 1     | 50  | 0          | 0 |
| 16              | 2                     | 100 | 0     | 0   | 0          | 0 |
| 21              | 2                     | 100 | 0     | 0   | 0          | 0 |
| 26              | 2                     | 100 | 0     | 0   | 0          | 0 |

Table 15 and Table 16 present comparative data, as the two respondents with formal ADHD knowledge have not provided any 'Don't know' responses to any of the statements within this subscale. This is indicative of their level of confidence in their responses as compared to the eighteen respondents who provided a 'Don't know' response above 10% to 8 out of the 9 statements that make up this subscale.

The two respondents demonstrated a good basic understanding of symptoms/diagnosis of ADHD. Although many of the eighteen respondents provided sound responses to the statements provided, too many still have misperceptions regarding the symptoms / diagnosis of ADHD. According to Glass & Wegar (2000); Kos et al (2006) in Legato ((2010) it is likely that educators' perceptions of ADHD learners affect their behaviour towards ADHD learners (Legato, 2010:1-2), therefore there is a need to eradicate general misconceptions or myths about ADHD to optimally accommodate ADHD learners in the teaching and learning process.

Although 100% of the 18 sample respondents believe that ADHD is not a disorder inherited from first degree biological relatives (question number 6), Hunt, Paguin and Payton (2001) in Gottesman (undated) indicate that ADHD is one of the many disorders that can be passed down genetically from a first degree relative. Another misconception noted in 89% of the eighteen respondents and 100% of the two respondents with formal ADHD knowledge, was that ADHD children generally experience problems in novel situations rather than familiar situations (question number 27), however ADHD learners actually have impaired functioning in multiple settings such as home, school and relationships.

It is essential for educators to identify symptoms of learning barriers in the classroom. The responses provided by the two respondents indicate a high level of knowledge with regards to symptoms/diagnosis of ADHD as compared to that provided by the eighteen respondents. Because healthcare professionals collect information about ADHD learners across environments to gain a holistic view, rule out possible infections, lifestyles changes and determine a management regime (Martin: undated), it is imperative for educators to know that the diagnostic procedure entails the observation of certain characteristics such as fidgeting with hands and feet, inability to remain seated or difficulty sustaining attention to tasks. Educators with a good knowledge base of the symptoms of ADHD are able to identify ADHD learners experiencing a problem with active attention, like being unable to listen for the next instruction; unable to remain focused to complete a task; unable to undertake two sources of information simultaneously or being easily distracted by extraneous events (Gaddes & Edgell 1994: 254-255). Not only would these educators act as a source of vital information for healthcare professionals but would also be able to accommodate these learner's learning needs in the classroom through learning support mechanisms.

### SUBSCALE THREE: TREATMENT OF ADHD

**Table 17: Responses from respondents without formal ADHD knowledge within subscale three.**

| Question Number | Number of Respondents |           |       |           |            |           |
|-----------------|-----------------------|-----------|-------|-----------|------------|-----------|
|                 | TRUE                  | %         | FALSE | %         | DON'T KNOW | %         |
| 2               | 4                     | <b>22</b> | 9     | <b>50</b> | 5          | <b>28</b> |
| 8               | 5                     | <b>28</b> | 3     | <b>17</b> | 10         | <b>56</b> |
| 10              | 13                    | <b>72</b> | 2     | <b>11</b> | 3          | <b>17</b> |
| 12              | 3                     | <b>17</b> | 7     | <b>39</b> | 8          | <b>44</b> |
| 15              | 6                     | <b>33</b> | 1     | <b>6</b>  | 11         | <b>61</b> |
| 18              | 3                     | <b>17</b> | 7     | <b>39</b> | 8          | <b>44</b> |
| 20              | 11                    | <b>61</b> | 2     | <b>11</b> | 5          | <b>28</b> |
| 23              | 14                    | <b>78</b> | 0     | <b>0</b>  | 4          | <b>22</b> |
| 25              | 3                     | <b>17</b> | 4     | <b>22</b> | 11         | <b>61</b> |
| 34              | 11                    | <b>61</b> | 2     | <b>11</b> | 5          | <b>28</b> |
| 35              | 2                     | <b>11</b> | 0     | <b>0</b>  | 16         | <b>89</b> |
| 36              | 4                     | <b>22</b> | 8     | <b>44</b> | 6          | <b>33</b> |

**Table 18: Responses from respondents with formal ADHD knowledge within subscale three.**

| Question Number | Number of Respondents |            |       |            |            |          |
|-----------------|-----------------------|------------|-------|------------|------------|----------|
|                 | TRUE                  | %          | FALSE | %          | DON'T KNOW | %        |
| 2               | 1                     | <b>50</b>  | 1     | <b>50</b>  | 0          | <b>0</b> |
| 8               | 1                     | <b>50</b>  | 1     | <b>50</b>  | 0          | <b>0</b> |
| 10              | 1                     | <b>50</b>  | 1     | <b>50</b>  | 0          | <b>0</b> |
| 12              | 0                     | <b>0</b>   | 2     | <b>100</b> | 0          | <b>0</b> |
| 15              | 2                     | <b>100</b> | 0     | <b>0</b>   | 0          | <b>0</b> |
| 18              | 0                     | <b>0</b>   | 2     | <b>100</b> | 0          | <b>0</b> |
| 20              | 2                     | <b>100</b> | 0     | <b>0</b>   | 0          | <b>0</b> |
| 23              | 2                     | <b>100</b> | 0     | <b>0</b>   | 0          | <b>0</b> |
| 25              | 0                     | <b>0</b>   | 2     | <b>100</b> | 0          | <b>0</b> |
| 34              | 1                     | <b>50</b>  | 1     | <b>50</b>  | 0          | <b>0</b> |
| 35              | 0                     | <b>0</b>   | 2     | <b>100</b> | 0          | <b>0</b> |
| 36              | 0                     | <b>0</b>   | 2     | <b>100</b> | 0          | <b>0</b> |

It is observed within this subscale as well, that the two respondents with formal ADHD knowledge displayed a higher level of confidence in answering the questions posed within this subscale by not providing any “Don’t know” responses. Uncertainty about the disorder is still seen amongst the eighteen respondents who have provided a percentage response above 10% as a ‘Don’t know’ response to each question posed within this subscale.

Responses from respondents with formal ADHD knowledge indicated a high level of knowledge of management regimes of the disorder which included types of medication to be taken. These respondents also had knowledge of the indications and side effects of the various types of categories of medication used to treat ADHD. Psychological intervention; focusing on behavioural therapy can be managed effectively at schools if educators knowledgeable about the management regimes are informed of the necessary steps to be carried out and maintained both at home and in the school environment.

Only 17% of the eighteen respondents still believe that stimulant drugs are commonly used in the treatment of ADHD symptoms (question number 25), while 61% agree that behavioural therapy, a form of psychological therapy focuses primarily on the problem of inattention (question number 34) and 89% of these respondents believe that shock therapy (electroconvulsive therapy) effectively treats severe ADHD cases (question number 35). 100% of the respondents in both sets of respondents still acknowledge the myths surrounding ADHD such as reducing sugar and food additive intake to decrease ADHD symptoms (question number 23).

Knowledge on these three subscales would have impacted on the ability to successfully respond to the questions posed in the fourth subscale regarding teaching strategies.



## SUBSCALE FOUR: TEACHING STRATEGIES

**Table 19: Responses from respondents without formal ADHD knowledge within subscale four.**

| Question Number | Number of Respondents |           |       |           |            |           |
|-----------------|-----------------------|-----------|-------|-----------|------------|-----------|
|                 | TRUE                  | %         | FALSE | %         | DON'T KNOW | %         |
| 37              | 16                    | <b>89</b> | 1     | <b>6</b>  | 1          | <b>6</b>  |
| 38              | 12                    | <b>67</b> | 4     | <b>22</b> | 2          | <b>11</b> |
| 39              | 3                     | <b>17</b> | 13    | <b>72</b> | 2          | <b>11</b> |
| 40              | 8                     | <b>44</b> | 4     | <b>22</b> | 6          | <b>33</b> |
| 41              | 12                    | <b>67</b> | 3     | <b>17</b> | 3          | <b>17</b> |
| 42              | 3                     | <b>17</b> | 7     | <b>39</b> | 8          | <b>44</b> |
| 43              | 4                     | <b>22</b> | 9     | <b>50</b> | 5          | <b>28</b> |

**Table 20: Responses from respondents with formal ADHD knowledge within subscale four.**

| Question Number | Number of Respondents |            |       |            |            |          |
|-----------------|-----------------------|------------|-------|------------|------------|----------|
|                 | TRUE                  | %          | FALSE | %          | DON'T KNOW | %        |
| 37              | 2                     | <b>100</b> | 0     | <b>0</b>   | 0          | <b>0</b> |
| 38              | 2                     | <b>100</b> | 0     | <b>0</b>   | 0          | <b>0</b> |
| 39              | 0                     | <b>0</b>   | 2     | <b>100</b> | 0          | <b>0</b> |
| 40              | 2                     | <b>100</b> | 0     | <b>0</b>   | 0          | <b>0</b> |
| 41              | 0                     | <b>0</b>   | 2     | <b>100</b> | 0          | <b>0</b> |
| 42              | 0                     | <b>0</b>   | 2     | <b>100</b> | 0          | <b>0</b> |
| 43              | 0                     | <b>0</b>   | 2     | <b>100</b> | 0          | <b>0</b> |

The two respondents with formal ADHD training matched the expected responses that the researcher had established with the scoring scale prior to conducting the research study. However, the responses from the eighteen respondents, while still varied, showed uncertainty; as many still selected the

'Don't know' alternative to the questions posed (an average of 21%). Although areas of strength could be distinguished when considering the number of responses that matched the expected responses within this subscale, there are many respondents who have perceptions that do not promote the accommodation of ADHD learners within the teaching strategies.

67% of the eighteen respondents believe that the purpose of co-operative learning is solely to build relationships amongst learners (question number 41), yet this strategy also serves to improve motivation and self-esteem within the ADHD learner (Pearson Education:2012). Certain respondents seemed unable to differentiate between developmental and academic skills. Based on their interpretation of developmental skills, 17% of the eighteen sample respondents felt that an educator talks teaching approach was the best way to accommodate learners with developmental skills problems (question number 42), however the definition of developmental skills refers to gross motor skills (bodily movements on a large scale), fine motor skills (intricate muscular movements), sensorimotor skills (reactions to the surrounding and ability to maintain balance and rhythm), visual and auditory perceptions, memory, attention, language and social competence.

These are skills that are developed over time; with exposure to circumstances that would allow for their development. In order for both visual and auditory development to occur, educators may make use of a DVD via a projector, which will allow for interpretation of information by both looking at the images; and listening to sounds accompanying the images.

Therefore it is evident that a teacher talks approach would be inappropriate to accommodate any developmental skills problem, unless it is followed by tasks requiring interpretation of the information provided by the educator in the form of an essay or the building of a model. This is further supported by a study conducted on Grade 6 learners by Stears and Gopal (2010), which found that the use of interpretive and interactive approaches to teaching and learning helped learners to achieve outcomes over and above that of the learning area.

Considering the responses of the two respondents across all four subscales, the researcher indicated that formal baseline knowledge does impact on teaching strategies.

#### **4.5 SUMMARY OF PRESENTATION**

The analysis of the data was discussed descriptively. The responses from respondents were categorised under four subscales. While comparing the respondents' scores it was found that more positive responses were provided in the areas of symptoms/diagnosis and teaching support strategies than in the other two subscales (general features and treatment of ADHD). The researcher also found that the respondents with a formal knowledge of ADHD, acquired through ADHD seminars and ADHD in-services courses provided responses that were positive and holistically sensible as compared to those respondents without formal ADHD knowledge. These respondents scored well in the three ADHD knowledge subscales, and due to their above average ADHD knowledge they were able to respond optimally with respect to the theory and practice of teaching support strategies. The researcher ascertained that a foundation of ADHD knowledge does impact on teaching support strategies in order to accommodate the needs of the ADHD learner; to ensure that academic and developmental success is achieved.

## **CHAPTER FIVE: SUMMARY, FINDINGS, RECOMMENDATIONS AND CONCLUSION**

### **5.1 INTRODUCTION**

The implementation of inclusive education has brought with it huge changes that has sparked resistance in some, while others have welcomed and embraced the challenge. However, some of the latter are faced with limitations to the implementation of inclusivity with regards to teaching support strategies. Many schools lack financial structures and as a result lack the necessary resources to accommodate the ADHD learner's needs. Yet, holistically, the problem may be that too many educators lack the knowledge to accommodate the learning barrier. This entails the lack of formal ADHD knowledge, which results in a poor understanding of what the disorder actually is about and those educators who try to gain knowledge somehow fall prey to myths. Either way, the situation becomes detrimental to the ADHD learner's academic performance. This research study has focused on ADHD not only as a disorder but also as a barrier to learning. The researcher has developed a relationship that exists between an educator's formal ADHD knowledge and the impact it may have on the educator's teaching support strategies in the accommodation of ADHD learners in the classroom.

### **5.2 SUMMARY**

The researcher has outlined the researcher methodology undertaken in this study which comprised of a mixed methods approach in order to optimise the purpose of the study.

### **5.2.1 SUMMARY OF CHAPTER ONE**

Chapter one provided an outline to the research study. The background to the study has briefly introduced the learning barrier, ADHD, while referring to the necessity of accommodating learning barriers in mainstream schools as per policy documents, which should be in practice. Within this chapter the research problem was posited as the poor level of accommodation of learners with learning barriers such as ADHD. The researcher then covered the need for educators to have basic background knowledge on the learning barrier in order to understand its manifestations and how to accommodate the needs of the learners with these disorders. Reference is made in particular to the selection of the appropriate teaching support strategies which serve a twofold purpose: one being the accommodation of the academic and developmental needs of the learner and the other; focusing the learner in the learning process. The teaching support strategy acts as a preventative measure for poor behaviour.

The research study was aimed at ascertaining the impact of an educators' ADHD knowledge their teaching strategies. Within this chapter the researcher also outlined the research methodology with respect to the methods of data collection, the research design and the associated data analysis together with the ethics surrounding the research process. Key terminology was also defined.

### **5.2.2 SUMMARY OF CHAPTER TWO**

The researcher outlined the theoretical framework, which set the tone for the research study to be conducted. The focus within this chapter was primarily based on two ideas, firstly on ADHD as a disorder and learning barrier and secondly on teaching strategies.

The researcher provided detailed information about the aetiology, diagnosis, symptoms and management of the disorder. General information regarding the disorder and its characteristics and prevalence across environments such as home and school were mentioned. A brief discussion regarding the effects on a child's developmental and academic skills were highlighted, while possible strategies were suggested in promoting the development of these skills.

The second part of the literature review focused on teaching strategies to accommodate the needs of the ADHD learner. The researcher made reference to multiple views of teaching strategies of other researchers, which support the general idea that the selection of an appropriate and effective teaching strategy will occur if the educator has basic knowledge of the learning barrier to be accommodated. The researcher provided detailed information about three types of teaching strategies.

### **5.2.3 SUMMARY OF CHAPTER THREE**

In this chapter, the researcher provided insight to the design of the research study. Information briefly outlined the need to use a quantitative approach to conduct the research study. A questionnaire was used as a data collection tool which was administered to respondents. The 43 question knowledge scale was categorised into four subscales for data analysis. Questions within the scale were responded to by means of 'True', 'False' or 'Don't know' alternatives which were provided on the questionnaire. The first part of the questionnaire determined the demographic profile of respondents in order to confirm that each of the respondents conformed to the sampling frame.

The twenty respondents were randomly selected from a sample population of approximately eighty sample respondents that conformed to a sampling frame.

#### **5.2.4 SUMMARY OF CHAPTER FOUR**

Within this chapter, the researcher presented the quantitative data analysis in the form of tables. This involved the categorising of correct responses to questions according to the subscales. Four subscales were identified, namely associated features of ADHD, symptoms/diagnosis of ADHD, treatment of ADHD and teaching support strategies. A scoring manual was used to score the responses. The respondents were required to select one alternative only from the three options provided per statement. These options were True, False or Don't Know.

The researcher then provided a detailed discussion of the data.

The researcher compared the scores of two respondents who had received formal ADHD knowledge against the balance of the eighteen respondents who did not. This created the opportunity to answer the research question posed in chapter one. The researcher was able to ascertain the impact of educators' formal ADHD knowledge on their teaching support strategies.

#### **5.3 FINDINGS OF THE RESEARCH**

- Many respondents lacked the confidence to provide a true or false response to identify their perceptions of the idea being questioned. An average of 42% of respondents selected the 'Don't know' alternative in subscale one (general associated features of ADHD); 27% of respondents in subscale two (symptoms/diagnosis); 38% of respondents in subscale three (treatment of ADHD) and 19% of respondents in subscale four (teaching support strategies). This created an atmosphere that uncertainty and a lack of knowledge regarding the disorder was prevalent.
- Responses to questions regarding general associated features of ADHD provided evidence of the lack of knowledge that respondents possessed as most of their responses represented a mythical perspective.

- Lack of knowledge regarding the treatment of ADHD is evident as the majority (89%) of respondents believed that shock therapy was an option in the treatment of ADHD.
- Misconceptions with regards to drug therapy were prevalent. This poses a concern as educators in the inclusive mainstream classroom may be required to assist with monitoring of the effects of drug therapy. This would entail understanding the purpose of administering a particular drug therapy and its associated side effects.
- Responses to the questionnaire as a whole represented a varied knowledge base of respondents to ADHD. The number of responses categorised as True; False and Don't know per question represent a variety of perceptions about ADHD.
- There is a lack of understanding with regards to the appropriateness of teaching strategies for the purpose of accommodating skills development. 17% of the eighteen sample respondents felt that an educator talks teaching approach was the best way to accommodate learners with developmental skills problems.
- There was no sense of uniformity in responses to questions posed about teaching strategies by the eighteen respondents who did not have formal ADHD knowledge. This indicates that selected teaching strategies were not fulfilling its purpose; which is to accommodate the needs of the learner. Jarmin (1996) in Kos, Richdale et al (2006) emphasises that ADHD learners perform much better in response to curricula that is altered to suit their needs (p.155). The adapting of curricula to accommodate ADHD learners will be fruitful, if the educator has basic knowledge of ADHD. This is supported by Atkinson et al (1997) in Kos and Richdale et al (2006), who states that educators tend to show greater structure and detail when employing teaching strategies as a result of their perceptions to an ADHD learner (p.150).
- The two respondents with formal ADHD knowledge provided responses to the questions within the teaching strategies subscale that showed understanding of accommodating the needs of the ADHD learner within



teaching strategies. These responses represented a good knowledge and understanding of ADHD, as the questions posed in the fourth subscale were devised on a foundation of the accommodation of the disorder.

#### **5.4 LIMITATIONS OF THE STUDY**

The main limitation of this research study was that it was conducted in only one part of the Kwa-Zulu Natal region. Although the sample secondary schools were randomly selected by the researcher, more sample schools should have been selected. Future research with a larger number of secondary schools, would result in the researcher's concluding generalisation being representative of a larger sample population rather than just twenty respondents.

Another limitation was that the research study was limited to secondary schools; however it would have been interesting to compare the responses from primary school respondents to that of secondary school respondents. This would have greatly helped the researcher to determine which level of school educators would urgently require formal ADHD knowledge. This is an implication for future research.

Despite these limitations, the researcher ascertained that an educator's ADHD knowledge does impact on teaching strategies, thereby generalising the results of the research study conducted.

#### **5.5 RECOMMENDATIONS**

The research study provided the researcher with insight into crucial problem areas within the inclusive education system that requires much time and attention from various stakeholders. This has been an information rich learning experience for the researcher.

As a result of the findings of the research study, the researcher has identified some factors that need attention in order for the inclusion of ADHD learners to take place optimally. These include:

- **In-service training** for educators to promote and implement the practice of inclusive education in the classrooms. The focus should be on learning barriers especially on ADHD, given its increased prevalence, and the associated teaching support strategies.
- **Parent and educator communication** to inform one another on a regular about the learner's response to interventions such as teaching support strategies or managements regimes.
- **Inclusion of baseline knowledge about the aetiology of disorders which are barriers to learning within tertiary education** as this would equip newly qualified educators with the tool to identify and accommodate the needs of the ADHD learner in the classroom.
- **Availability of printed material discussing ADHD as a learning barrier**, which should be easily accessible within the school environment. Educators should be able to meet and discuss appropriate teaching strategies to accommodate the needs of the ADHD learner.

## 5.6 CONCLUSION

The researcher concluded that the high frequency of 'Don't know' responses by the respondents raised points of concern about the myths and misconceptions that some educators may have concerning the treatment or management of ADHD. Many respondents believed that drug therapy in the form of antidepressants were not effective in reducing symptoms such as hyperactivity, poor concentration levels or fidgeting with hands or feet in ADHD with children. However, antidepressants such as imipramines, amitriptyline and desipramines have in fact been prescribed for the management of ADHD symptoms of anxiety.

In the present day, the treatment and management of ADHD incorporates a range of medication used alone or in conjunction (Noonan:2010), to antidepressants to manage children's moods while managing the hyperactivity with psychological therapy to promote self acceptance and goal setting for the ADHD child (Hinshaw: undated & Rabiner: 2006)

The two respondents with formal ADHD knowledge provided confident responses that were representative of effective appropriate teaching strategies, as a result of their understanding of the aetiology of this learning barrier.

The researcher found that the two respondents with ADHD knowledge had an extremely similar knowledge base regarding ADHD, although both received their formal ADHD knowledge via different channels (one through attendance at an ADHD seminar and the other through an ADHD in-service course). The contrary applied for the eighteen respondents who clearly had very diverse ideas regarding ADHD.

Accommodation of ADHD learners' needs in the learning process through teaching support strategies is built upon the knowledge base of and perceptions about the learning disorder. According to Rabiner (2004), ADHD learners fail to receive the assistance required to be successful because educators have a severe lack of important knowledge about the disorder. This is further supported by Scuitto, Terjesen et al (2000), who found that evidence of poor knowledge can be seen in educators who have no idea how to stimulate or accommodate the ADHD learner (p.115-117).

Regarding the eighteen educators who did not receive formal ADHD knowledge training; Ohan, Cormier et al (2008) state that educators who lack knowledge of ADHD may fail to notice warning signs of the disorder, and that their poor knowledge will also impact on support of the treatment regime for

a diagnosed learner (p.437). The study conducted by Ohan, Cormier et al (2008) found that educators with inadequate ADHD knowledge also lack confidence to manage the learners effectively. ADHD learners are often placed on treatment plans to assist with concentration levels and further assistance from the various stakeholders are required. Eckert & Hintze (2000:421) and Wilson & Jennings (1996) in Vereb & DiPerna (2004) indicated that the effectiveness of a treatment plan may be comprised if the educator either refuses to implement the intervention, implements the intervention incorrectly or fails to complete the intervention.

However, the selection of appropriate teaching strategies is dependent on having basic knowledge of a learning barrier such as ADHD. The study provided sufficient insight to the researcher to answer the research question. It is clear that educators without a sound foundation of knowledge of ADHD will have their own perceptions of both the disorder (ADHD) and the learner experiencing the disorder. This could adversely affect their approach to accommodating this learner within the classroom; by causing them to select inappropriate teaching and learning strategies or classroom management styles. Learning support materials can only be selected once an educator has determined the impact it will have on the learner's academic and behavioural outcome. Therefore an educator's level of ADHD knowledge does impact on their teaching strategies.

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## **5.8 APPENDICES.**

**APPENDIX A:** PERMISSION TO CONDUCT THE RESEARCH FROM THE KWA-ZULU NATAL DEPARTMENT OF EDUCATION

**APPENDIX B:** PERMISSION LETTER TO THE PRINCIPAL TO CONDUCT THE RESEARCH AT THE SECONDARY SCHOOL.

**APPENDIX C:** PERMISSION TO USE THE KADDS SCALE

**APPENDIX D:** QUESTIONNAIRE

## APPENDIX A:

### APPENDIX A:



**kzn education**

Department:  
Education  
KWAZULU-NATAL

Enquiries: Sibusiso Alwar

Tel: 033 341 8610

Ref.:2/4/8/212

Ms. Nathasia Naidoo  
85 Rainbow Crescent  
Westcliffe  
Chatsworth  
4092

Dear Ms. Naidoo

#### PERMISSION TO CONDUCT RESEARCH IN THE KZN DoE INSTITUTIONS

Your application to conduct research entitled: **Impact of Educator Knowledge of ADHD on Teaching Strategies**, in the KwaZulu-Natal Department of Education Institutions has been approved. The conditions of the approval are as follows:

1. The researcher will make all the arrangements concerning the research and interviews.
2. The researcher must ensure that Educator and learning programmes are not interrupted.
3. Interviews are not conducted during the time of writing examinations in schools.
4. Learners, Educators, Schools and Institutions are not identifiable in any way from the results of the research.
5. A copy of this letter is submitted to District Managers, Principals and Heads of Institutions where the intended research and interviews are to be conducted.
6. The Period of investigation is limited to the period from 01 June 2012 to 30 December 2013.
7. Your research and interviews will be limited to the schools you have proposed and approved by the Head of Department. Please note that Principals, Educators, Departmental Officials and Learners are under no obligation to participate or assist you in your investigation.
8. Should you wish to extend the period of your survey at the school(s), please contact Mr. Alwar at the contact numbers below.
9. Upon completion of the research, a brief summary of the findings, recommendations or a full report / dissertation / thesis must be submitted to the research office of the Department. Please address it to The Director-Resources Planning, Private Bag X9137, Pietermaritzburg, 3200.
10. Please note that your research and interviews will be limited to the following Schools and Institutions:

10.1 Schools in the Umlazi District

  
Nkomo S.P. Sishi, PhD  
Head of Department: Education

2012/06/27  
Date

...dedicated to service and performance  
beyond the call of duty.

KWAZULU-NATAL DEPARTMENT OF EDUCATION

POSTAL: Private Bag X9137, Pietermaritzburg, 3200, KwaZulu-Natal, Republic of South Africa

PHYSICAL: Office G 25, 188 Pietermaritz Street, Metropolitan Building, Pietermaritzburg 3201

TEL: Tel: +27 33 341 8610 | Fax: +27 33 3341 8612 | E-mail: sibusiso.alwar@kzndoe.gov.za |  
Web: www.kzneducation.gov.za

**APPENDIX B:**

85 Rainbow Crescent  
Westcliff  
Chatsworth  
4092

Date: \_\_\_\_\_

For att: The Principal

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Sir/ Madame

I am a student at the University of South Africa, registration number: 41414039 and am working towards completion of my MEd (Inclusive Education) studies. The topic of my dissertation is *The Impact of educator ADHD knowledge on teaching strategies*. To complete the requirements of my course, a questionnaire needs to be completed. Details of the questionnaire, entail questions from the Knowledge of Attention Deficit Disorder Survey (Scuitto; et al:2000), and questions based on educator's knowledge of teaching strategies. My research population is limited to the secondary schools within the Umlazi district of the Durban Central circuit of the KZN education sector. By means of a random selection your establishment was chosen as one of the secondary schools in which 10 sample respondents will be administered the questionnaire for completion.

It would be highly appreciated if you would allow me to conduct the data collection process at your establishment, at the convenience of both you and your staff who will be the sample respondents. Upon granting me permission, we will determine the most convenient time for data collection.

I would like to take this opportunity to thank you in advance for your time and understanding.

Regards

\_\_\_\_\_  
Ms.N.Naidoo

I, the Principal of \_\_\_\_\_ hereby grant/ do not grant permission for Ms.Naidoo to conduct her questionnaire at my establishment.

\_\_\_\_\_  
Signature: Principal

\_\_\_\_\_  
Date



**APPENDIX C:**

**MUHLENBERG**  
COLLEGE

April 25, 2012

Ms. Nathasia Naidoo

Dear Nathasia,

Thank you for your interest in the Knowledge of Attention Deficit Disorders Scale (KADDS). I am writing to formally grant you permission to translate, adapt, and use the KADDS for your research study. As we have discussed via e-mail, I ask only that you send me a copy of your results and the translated instrument when they are available. I wish you luck with your study and I look forward to reading more about your work.

Sincerely,



Mark J. Sciutto, Ph.D.

Department Chair, Associate Professor of Psychology

1- (484) 664-3649

Sciutto@muhlenberg.edu

**APPENDIX D:**

**IMPACT OF EDUCATOR KNOWLEDGE OF ADHD ON TEACHING STRATEGIES  
DEMOGRAPHICS**

Reference number: \_\_\_\_\_

1.School Name: \_\_\_\_\_

2. Circuit : \_\_\_\_\_ 3. DISTRICT : \_\_\_\_\_

4. Age: \_\_\_\_\_ 5. Sex: \_\_\_\_\_

6. Qualifications: \_\_\_\_\_

7. Years of teaching experience: \_\_\_\_\_ 8. Grades taught: \_\_\_\_\_

9.Have you ever taught ADHD learners: Yes / NO (Please circle)

10.Have you attended any of the following with regard to ADHD (Please circle):

In-Service Course / Seminars / Workshops / None

## IMPACT OF EDUCATOR KNOWLEDGE OF ADHD ON TEACHING STRATEGIES

Please answer the following questions regarding Attention-Deficit/Hyperactivity Disorders (ADHD).

If you are unsure of an answer, respond Don't Know (DK), DO NOT GUESS.

True (T), False (F), or Don't Know (DK) (circle one):

|    |        |  |
|----|--------|--|
| 1  | T F DK | Most estimates suggest that ADHD occurs in approximately 15% of school age children.   |
| 2  | T F DK | Current research suggests that ADHD is largely the result of ineffective parenting skills.   |
| 3  | T F DK | ADHD children are frequently distracted by extraneous stimuli.   |
| 4  | T F DK | ADHD children are typically more compliant with their fathers than with their mothers.   |
| 5  | T F DK | In order to be diagnosed with ADHD, the child's symptoms must have been present . before age 7   |
| 6  | T F DK | ADHD is more common in the 1st degree biological relatives (i.e. mother, father) of children with ADHD than in the general population.   |
| 7  | T F DK | One symptom of ADHD children is that they have been physically cruel to other people.  |
| 8  | T F DK | Antidepressant drugs have been effective in reducing symptoms for many ADHD children.  |
| 9  | T F DK | ADHD children often fidget or squirm in their seats.   |
| 10 | T F DK | Parent and teacher training in managing an ADHD child are generally effective when combined with medication treatment.   |
| 11 | T F DK | It is common for ADHD children to have an inflated sense of self-esteem or grandiosity.  |
| 12 | T F DK | When treatment of an ADHD child is terminated, it is rare for the child's symptoms to return.  |
| 13 | T F DK | It is possible for an adult to be diagnosed with ADHD.   |
| 14 | T F DK | ADHD children often have a history of stealing or destroying other people's things .   |
| 15 | T F DK | Side effects of stimulant drugs used for treatment of ADHD may include mild insomnia and appetite reduction.   |
| 16 | T F DK | Current wisdom about ADHD suggests two clusters of symptoms: One of inattention and another consisting of hyperactivity/impulsivity.   |
| 17 | T F DK | Symptoms of depression are found more frequently in ADHD children than in. non-ADHD children   |
| 18 | T F DK | Individual psychotherapy is usually sufficient for the treatment of most ADHD children.  |
| 19 | T F DK | Most ADHD children "outgrow" their symptoms by the onset of puberty and subsequently function normally in adulthood.   |
| 20 | T F DK | In severe cases of ADHD, medication is often used before other behavior modification . techniques are attempted  |
| 21 | T F DK | In order to be diagnosed as ADHD, a child must exhibit relevant symptoms in two or more settings (e.g., home, school).   |
| 22 | T F DK | If an ADHD child is able to demonstrate sustained attention to video games or TV for over an hour, that child is also able to sustain attention for at least an hour of class or homework. |

|    |        |  |
|----|--------|--|
| 23 | T F DK | Reducing dietary intake of sugar or food additives is generally effective in reducing the symptoms of ADHD.  |
| 24 | T F DK | A diagnosis of ADHD by itself makes a child eligible for placement in special education.   |
| 25 | T F DK | Stimulant drugs are the most common type of drug used to treat children with ADHD  |
| 26 | T F DK | ADHD children often have difficulties organizing tasks and activities.   |
| 27 | T F DK | ADHD children generally experience more problems in novel situations than in familiar situations.  |
| 28 | T F DK | There are specific physical features which can be identified by medical doctors (e.g. pediatrician) in making a definitive diagnosis of ADHD.  |
| 29 | T F DK | In school age children, the prevalence of ADHD in males and females is equivalent.   |
| 30 | T F DK | In very young children (less than 4 years old), the problem behaviors of ADHD children (e.g. hyperactivity, inattention) are distinctly different from age-appropriate behaviors of non-ADHD children. |
| 31 | T F DK | Children with ADHD are more distinguishable from normal children in a classroom setting than in a free play situation.   |
| 32 | T F DK | The majority of ADHD children evidence some degree of poor school performance in the elementary school years.  |
| 33 | T F DK | Symptoms of ADHD are often seen in non-ADHD children who come from inadequate and chaotic home environments.   |
| 34 | T F DK | Behavioral/Psychological interventions for children with ADHD focus primarily on the child's problems with inattention.  |
| 35 | T F DK | Electroconvulsive Therapy (i.e. shock treatment) has been found to be an effective treatment for severe cases of ADHD.   |
| 36 | T F DK | Treatments for ADHD which focus primarily on punishment have been found to be the most effective in reducing the symptoms of ADHD.   |
| 37 | T F DK | Inclusivity is about supporting and accepting all learners in the classroom.   |
| 38 | T F DK | A teaching approach may pose as a barrier to learning for an ADHD learner.   |
| 39 | T F DK | ADHD learners should not receive any additional support by adjusting the teaching strategies because they are the same as the other learners.  |
| 40 | T F DK | The use of interactive teaching approaches can affect the academic ability of an ADHD learner.   |
| 41 | T F DK | The purpose of co-operative learning is to build relationships amongst learners.   |
| 42 | T F DK | Learners with developmental skills problems are best accommodated by an educator talks teaching approach   |
| 43 | T F DK | Whole class discussions can never assist ADHD learners as it does not offer for the development of any skills.   |

