

**Educators' knowledge and understanding of
attention deficit hyperactivity disorder (ADHD): A
case study of a semi-rural school in KwaZulu-Natal**

by

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DECLARATION

Statement of the student:

By submitting this research study for evaluation, I declare that it represents my own original effort and that I have not plagiarised the work of anyone else in completing the requirements for this research project. I acknowledge that this is my own work and where the work of others has been used, it has been appropriately cited and referenced.


Mrs Joashnie Naidoo

Signature: 

Date: **22.08.2019**

Statement of the supervisor:

I, Makie Kortjass, as supervisor, hereby declare that the thesis written by Joashnie Naidoo (student number: 209510382) titled “Educators’ knowledge and understanding of Attention Deficit Hyperactivity Disorder (ADHD): A case study of a semi-rural school in KwaZulu-Natal” is her own writing prepared under my supervision, thus I support its submission.

Signature: 

Date: **22.08.2019**

ABSTRACT

Attention deficit hyperactivity disorder (ADHD) is a developmental disorder that affects both children and adults. It is associated with the inability to pay attention and often results in distraction and hyperactive behaviour. This study investigated educators' knowledge and understanding of ADHD and their ability to identify the symptoms of this disorder in the classroom. It focused on the role of the educator in managing the classroom to cater for the needs of the learner affected by ADHD in a secondary school setting. Educators in secondary schools face difficulties with the narrowing of the curriculum as more focus is placed in this phase of schooling on abstract and analytical learning approaches. Research has revealed that, for many years, it was assumed that ADHD disappears at puberty and that children with ADHD would outgrow behavioural difficulties associated with the disorder upon reaching adolescence or early adulthood. However, numerous investigations have revealed that 70% - 80% of children who exhibit deficit in attention and impulsivity in childhood continue to do so in adulthood. Educators thus need to be aware of the prevalence of ADHD in secondary schools and how to accommodate learners with ADHD in their classrooms. The study was conducted in a semi-rural secondary school in Umzinto, KwaZulu-Natal. It employed a qualitative case study approach. The participants of this research study included eight appropriately qualified, practicing educators. Data were generated by means of semi-structured interviews and questionnaires. All eight participants were involved in both research instruments. From the responses of the participants, it was evident that the educators were not equipped with the relevant knowledge and skills to deal with learners with ADHD as they claimed not to have received any training on the topic and had to acquire knowledge from experience. The participants revealed that they felt uncomfortable to deal with learners with ADHD in the classroom as they had insufficient knowledge and understanding of these learners' special needs. The study concluded that there is a need to educate and empower educators with the necessary knowledge and skills to identify learners who manifest the symptoms of ADHD in their classrooms. Moreover, educators should be able to create classroom modifications to cater for the needs of learners with ADHD to promote effective teaching that results in effective learning for all learners.

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DEDICATION

My research study is dedicated to all those young children who are affected by attention deficit and hyperactivity disorder (ADHD) and who have been unable to get the necessary help from their parents, educators and care-givers due to a lack of knowledge and understanding of this disorder.

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List of Acronyms

ADHD	Attention Deficit Hyperactivity Disorder
ADD	Attention Deficit Disorder
DSM-IV	Diagnosis and Statistical Manual of Mental Disorders
DBE	Department of Basic Education

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CHAPTER 1

BACKGROUND AND INTRODUCTION TO THE STUDY

1.1 Introduction

Including all children in education is the major challenge facing educational systems around the world, in both developing and developed countries (Ainscow & Sandill, 2010). Therefore, educators must be able to have the necessary knowledge and skills to somehow bridge this gap. It is important for educators to understand various learning disabilities that exist within the classroom to ensure that they include and accommodate learners with different needs and requirements. In this study, I explored educators' knowledge and understanding of the attention deficit and hyperactivity disorder (ADHD). I also examined the methods that educators used to accommodate learners with ADHD to determine the effectiveness of the strategies that they employ in teaching learners with ADHD. As this chapter progresses, it presents the background and context of the study, the purpose and rationale of the study, and the problem statement. It thereafter highlights the location of the study, the objectives of the study, and key research questions that will be addressed during the study. This chapter also provides an insight of the research methodology, the approach to the study; which briefly highlights the research paradigm, the theoretical framework, the research design, data generation and the data analysis methods. Thereafter, the challenges and limitations of the study are discussed and an overview of the chapters is presented.

1.2 Background and Context of the Study

Attention deficit hyperactivity disorder (ADHD) is a commonly used term for a specific developmental disorder that manifests in both children and adults. This disorder is characterised by deficits in behavioural inhibition, sustained attention, resistance to distraction, and the regulation of one's activity level to the demands of a situation (hyperactivity or restlessness) (Barkley & Murphy, 2006). ADHD is a neuro-behavioural condition that is characterised by excessive restlessness, inattention, distraction, and impulsivity (American Academy of Child and Adolescent Psychiatry & American Psychiatric Association, 2004).

According to the National Institution of Mental Health (2001), many studies suggest that genetics is the main cause of ADHD; however, the institution claims that there is not just one cause, but a combination of different factors that contribute to the manifestation of ADHD. In addition to genetics that plays a crucial role in the cause of ADHD, researchers are looking at how various

environmental factors, brain injuries, nutrition, and social environments may contribute to ADHD (National Institution of Mental Health, 2001).

Rabiner (2006) is of the opinion that ADHD is a disorder associated with a continuous pattern of inattention and/or hyperactivity and/or impulsivity as symptoms that occur in academic, occupational and social settings. Rabiner (2006) argues that the problems with attention may result in making careless mistakes and being easily distracted, whereas the problems with hyperactivity will include excessive fidgetiness, running or climbing when it is not appropriate, and talking excessively. Rabiner (2006) further claims that impulsivity can show up as impatience, difficulty awaiting one's turn, blurting out answers, and frequent interruption.

Brock (2002) argues that, because the primary symptoms of ADHD are hyperactivity, impulsivity and inattention, this creates various problems in the classroom. During classroom activities or lessons, hyperactive children will fidget or get up and move around the classroom and the learners will incessantly disrupt the lesson. Such learners may feel restless and need to stay busy all the time (American Academy of Child and Adolescent Psychiatry & American Psychiatric Association, 2004). Impulsive children often blurt out comments without thinking first. They act on their impulses without thought about their actions or the consequences of their actions. They may display their emotions without restraint. Impulsive children tend to make decisions that have small immediate benefits rather than working towards larger delayed rewards (American Academy of Child and Adolescent Psychiatry & American Psychiatric Association, 2004). Inattentive children may quickly get bored in the classroom and may find it difficult to complete an activity unless it is something that they really enjoy. Brock (2002) states that learners affected by ADHD require behavioural interventions, especially in the classroom, to ensure that classroom management is executed effectively. No treatment has yet been discovered to cure ADHD. However, there are numerous treatments that can effectively assist with the management of ADHD and that can curb the symptoms. Some of the most effective psychological treatment methods are behaviour modification in the classroom and parent training in child behaviour management (Rabiner, 2006).

According to the South African Education White Paper 6, inclusive education is about acknowledging that all children need support. It is about accepting and respecting the fact that all learners are different and that they have different learning needs. Education White Paper 6 further highlights that some learners may require more intensive and specialized forms of support to be able to develop to their full potential and that there are structures in place that will assist educators

to ensure that they are instrumental in this process (Department of Education, 2001). It is important for educators to seek support for working with learners who experience difficulty in learning, such as those with ADHD. Educators should work together with other members of the staff as well as the community to meet the needs of all learners. Therefore, educators should seek the necessary help to be able to provide an inclusive classroom environment where the needs of all learners are catered for, with special reference to those who have ADHD.

It is evident that limited research has been conducted in South Africa on educators' knowledge and understanding of ADHD. However, numerous international studies have investigated this phenomenon. A research conducted in Denmark about the knowledge that both primary and secondary school educators had about ADHD revealed that educators' knowledge of ADHD was very limited and they needed more knowledge about the characteristics, prognosis and treatment of ADHD (Jensen, Jensen, Schnack, & Thingvad, 2015).

Jensen et al. (2015) claim that policy makers must ensure that resources are made available for educating educators about ADHD, especially now that it is becoming more common for ADHD children to be included in regular education classrooms. This is a vital point, especially as it is necessary to ensure that inclusive education is managed effectively. Educators need to have knowledge of ADHD in order to create a positive environment that is conducive for the learning and development of children with ADHD, and this should ultimately lead to more equal opportunities for those with developmental disorders while also improving the work environment for educators (Jensen et al., 2015).

In this study I attempt to explore educators' knowledge and understanding of ADHD. I also aim to examine the methods that the educators use to accommodate learners with ADHD in their classroom, as well as, determine which of these strategies are effective in the classroom when dealing with ADHD. By gaining this information, I hope to create awareness of the disorder and the importance of educators' knowledge and understanding of ADHD.

Youssef, Hutchinson and Youssef (2015) stress the point that educators are the first persons responsible for identifying children with ADHD; and further argue that educators' overall knowledge of ADHD is significantly low. Therefore, there is a need for educators to become more educated about ADHD to better equip them to deal with children affected by this disorder. Brook, Watemberg and Geva (1999) agree that educators' knowledge and understanding of ADHD are insufficient. Although educators have a relatively tolerant attitude towards learners that have ADHD, they seem to lack information about the causes and symptoms of and the treatment for

this disorder. This could be a result of the lack of training that educators receive on ADHD during their initial educator training programs as well as during their years of teaching. Therefore, it is important that educators are trained to understand and cope with learners who have ADHD and that they should know how to include these learners in effective classroom activities (Jensen et al., 2015).

1.3 Purpose and Rationale

My professional interest in conducting this research study stemmed from the fact that I was an educator in a rural school at the time. I noted that all educators are likely to teach multiple learners with ADHD over the course of their careers without knowing it. In my experience, and from anecdotal evidence, if educators are not aware of ADHD and do not have adequate training they feel unprepared to handle classroom challenges that involve learners with ADHD. It is particularly in rural schools that educators face multiple challenges such as a lack of resources and overcrowded classrooms, and therefore the challenge of teaching learners with ADHD may be overwhelming in these schools. Educators are also often unaware that their ‘difficult’ learners have ADHD as they have not been diagnosed with the disorder, although they exhibit the symptoms associated with ADHD.

Barkley (1998) states that numerous studies conducted in Australia, North America and South Africa have shown that most learners who are diagnosed with ADHD are of normal intelligence or even very bright, yet they experience difficulty in applying their intelligence to everyday situations due to their often-impulsive nature. Barkley (1998) further states that, due to this impulsive behaviour, these learners are highly likely to have learning disabilities that lead to poor academic performance. Most studies also assessed the knowledge that educators had regarding ADHD and its symptoms and revealed that educators were not knowledgeable on the topic. According to Barkley (1998), this lack of knowledge that educators have on the symptoms of ADHD is a matter of great concern, not only because they need to be knowledgeable about the diagnosis and prognosis of this affliction to reduce the risk of misdiagnosis and referrals, but also to ensure that educators are able to manage learners with ADHD in the classroom in order for effective teaching and learning to occur.

The parents of children with ADHD in rural schools are also unaware of this condition, and this is often a barrier to making the correct diagnosis. Children spend most of their waking hours with their educators, and therefore it is the duty of educators to procure the necessary information and

skills to identify learners who show symptoms of ADHD and to find ways to support such learners during teaching and learning. The parents can then ensure that they take the prescribed steps to ensure that the child is evaluated and assessed so that a final diagnosis can be made, thus enabling the parents and educators to intervene by means of appropriate strategies to manage the disorder in the classroom and at home. Moreover, parents and educators need to work collaboratively to create a support system for the child.

I decided to conduct my research at a secondary school and to focus on educators that teach Grade 8 learners, primarily because individuals with ADHD may experience difficulties in the transition from primary (Grades 4 - 7) to secondary school (Grades 8 - 12) where increased emphasis is placed on their ability to be self-organized and autonomous both in their learning and social behaviour. According to Wheeler (2010), learners with ADHD may have problems with the narrowing of the curriculum in the secondary school setting where more use is made of abstract and analytical learning approaches than in the primary school. For many years it was assumed that ADHD disappears at puberty and that children with ADHD would outgrow behavioural difficulties associated with the disorder upon reaching adolescence or early adulthood. However, numerous investigations have revealed that 70% - 80% of older people continue to exhibit significant deficits in attention and impulsivity compared to their adult peers. Investigations have also revealed that up to 70% of those who were diagnosed with ADHD in their childhood years carry ADHD traits into adulthood (Wheeler, 2010).

My interest was also stimulated to conduct a study on this topic because, from a theoretical perspective, I gleaned that not enough research had been done on educators' knowledge and understanding of ADHD. I therefore envisage that the findings of this research, when appropriately disseminated, will provide enhanced insight into and understanding of the importance of the role of educators in identifying the symptoms of ADHD in their learners in the classroom. Bronfenbrenner's Ecological Model of Child Development within the eco-systemic theory suggests that it is crucial to note the importance of the educator in the life of the child. The educator can certainly bring about change in the child that has ADHD by engendering a positive influence on the mesosystem so that the child can overcome the obstacles that he/she faces and continue a healthy lifestyle with progressive holistic development. The theoretical framework that I adopted for this study thus employed the constructivism learning theory that aims to provide enlightened understanding of how educators come to gain knowledge of a particular

developmental phenomenon in children. This theory was beneficial to my research study as it helped me to illuminate the importance of educators' knowledge and understanding of ADHD.

1.4 Problem Statement

Putting inclusive education into practice and within diverse classrooms, teachers have to support and teach according to a variety of needs and preferences of learners, among them are learners with ADHD (Perold, Louw & Kleynhans, 2010). The main focus and purpose of this study is to investigate educators' knowledge and understanding of Attention Deficit Hyperactivity Disorder (ADHD). This case study was conducted in a semi-rural school. There are many challenges that educators teaching in a semi-rural school face, such as the lack of resources, language barriers and overpopulated classrooms. Therefore, teaching learners with ADHD in the classroom becomes an added challenge. My aim of this study is to investigate the knowledge that these educators have on ADHD, and to explore what strategies they use to accommodate the learners in their classroom effectively.

1.5 Location of the Study

This research study was located in Riverside Secondary School¹ that is situated in Umzinto, which is a small coastal town about 10 km from Park Rynie on the subtropical south coast of KwaZulu-Natal. The school falls under the Umdoni local municipality and the UGU (coastal) district municipality. To enhance understanding of the population of the study area, the following data were obtained from Census Statistics of South Africa (Frith, 2011). At the time of the study, Umzinto had a population of approximately 16 205 individuals comprising 8 158 males and about 8 047 females. The racial composition of this small town comprised 8 951 black Africans, 6 764 Indians, 303 Coloureds, 70 Whites, and 117 individuals under the 'other' racial category. English (47.91%), isiZulu (40.03%), isiXhosa (8.93%), isiNdebele (0.71%), Afrikaans (0.52%), Sesotho (0.19%), Setswana (0.16%), Xitsonga (0.09%), Sepedi (0.07%), SiSwati (0.03%) and Tshivenda (0.03%) were the languages that were spoken.

The residents of Umzinto are mainly working-class people and the area is plagued by a relatively high crime rate that is due to high poverty in the area. Riverside Secondary School is one of the two secondary schools in Umzinto. It was established in 1984 during the apartheid era. The study

¹ Riverside Secondary is a pseudonym used to protect the identity of the school.

was located at this public high school, where the majority of the educators are first language English speakers. However, the majority of the learner population are second language English speakers. The study was conducted in English. When I conducted my study, the school had a learner population of 1 050 learners, of which 98% was of the black or African ethnic group. The remaining 2% comprised Indian, Coloured and White learners. The school is situated in close proximity to a very large informal settlement and the majority of the school's learner population comes from this informal settlement. The teacher to learner ratio is approximately 40:1. All data generation was conducted at this particular location, on the school premises. The reason behind choosing this particular school for my research study was due to the fact that I am an educator at this school and found that there are many learners that have symptoms of ADHD. I found that there was a need to explore educators' knowledge and understanding of ADHD at this particular school.

1.6 Objectives of the Study

The primary aim of the study was to explore educators' understanding of the ADHD phenomenon and how it impacted the learners in their classrooms. To achieve this aim, the objectives of this study were:

- To explore educators' knowledge and understanding of the attention deficit hyperactivity disorder (ADHD).
- To examine the methods that educators used to accommodate learners with attention deficit hyperactivity disorder (ADHD).
- To determine the effective strategies that educators employ in teaching learners with ADHD.

1.7 Key Research Questions

- What knowledge do educators have about attention deficit hyperactivity disorder (ADHD)?
- What strategies do educators use to accommodate learners with attention deficit hyperactivity disorder (ADHD)?
- Which strategies are most effective that educators employ in teaching learners with ADHD?

1.8 Research methodology: Case Study

This study adopted an exploratory case study as its methodological approach. According to Mills, Durepos and Wiebe (2010), an exploratory case study investigates distinct phenomena characterised by a lack of detailed preliminary research, especially formulated hypothesis that can be tested, or by a specific research environment that limits the choice of methodology. One of the aims of an exploratory case study is to prove that further research is necessary, and this is the case with this research study, as collecting data for this research proved to be difficult. It is a case study that is conducted for a problem that does not have sufficient research conducted on a specific topic. Exploratory case studies aim to provide significant insight into a given situation. Therefore, I have decided to use this type of research methodology for my qualitative research study.

1.9 Approach to the Study

1.9.1 Research paradigm

The paradigm that I chose to work within was the interpretivist paradigm. This paradigm is grounded in knowledge of life experiences and focuses on interpreting and understanding such experiences. Denzin and Lincoln (2003) suggest that an interpretive research paradigm is used to understand human behaviour and to empathise with it. The interpretive paradigm aims to understand a phenomenon from the meaning that people attach to it. Interpretive research thus aims to produce understanding and interpretation of the research topic (Myers, 2009). The interpretivist paradigm is driven by a set of views, opinions and beliefs about the world and how the world should be interpreted and studied (Denzin & Lincoln, 2003). Therefore, the methodologies that are used within this type of paradigm lend themselves to subjectivity and interpretation. For this reason the interview method for data collection was used as one of the data collection tools in this research study as this allowed me to interpret and understand the educators' knowledge of ADHD.

The interpretivist research paradigm attempts to derive its constructs from the field by an in-depth examination of the phenomenon of interest. Under this specific paradigm, it is assumed that knowledge and meaning are acts of interpretation; hence there is no objective knowledge that is independent of thinking, reasoning humans. Myers (2009) adds that the premise of interpretive researchers is that access to reality is only through social constructions such as language, consciousness and shared meanings. Myers (2009) further claims that interpretivist research is underpinned by observation and interpretation; thus, to make observations, the researcher has to

collect information about events, while to interpret is to make meaning of that specific information by drawing inferences or by judging the match between the information and some abstract pattern. Therefore, interpretive research attempts to understand phenomena through the meanings that people assign to them. This research study used this paradigm to gain information on educators' knowledge and understanding of ADHD which allowed clear and valid interpretations of the results.

1.9.2. Qualitative Research Approach

The methodology that I used for this research study was qualitative in nature. According to Pope and Mays (2000), qualitative research is a type of scientific research that consists of an investigation that involves answering a question. The researcher thus collects data as a form of evidence to ensure that valid findings are elicited. In this type of research, the findings are not determined in advance, but rather after the collected data have been analysed. A study of this nature aims to elicit in-depth understanding of the research problem rather than finding measurable data, as is the case in quantitative research methodologies. Denzin (2000) adds that qualitative research seeks to understand a given research problem or topic from the perspectives of the local population it involves. This was an appropriate approach as the research study aimed to understand educators' knowledge and understanding of the Attention Deficit Hyperactivity Disorder (ADHD).

1.9.3 Theoretical framework

A study that was conducted by Swanson (2013) provides persuasive evidence that theories are formulated to explain, predict and understand phenomena and, in many cases, that this challenges and extends existing knowledge. A theoretical framework is a structure that basically holds and supports a theory of a research study. The theory that framed this research study was constructivism and it focused on the ideas that were expressed by Jean Piaget. Constructivism is a learning theory of knowledge that claims that humans generate their knowledge from an interaction between their experiences and their ideas. Constructivism claims that individuals learn by constructing meaning and through interpretative interactions with and experiences of their environment, therefore this learning theory was best suited as a framework for my research study. Based on my personal experiences as an educator, I argue that educators are insufficiently trained to understand the ADHD phenomenon. For example, during my own initial educator training I was not exposed to the concept of ADHD nor was I trained to deal with ADHD cases. Therefore, the constructivism theory was utilised to explain, predict and understand how educators come to know about and gain understanding of ADHD. Piaget grounded his developmental learning

theory in the understanding that individuals are positioned in active, intelligent and creative constructors of their own knowledge structures. Piaget focused on a process called psychogenesis, which suggests that intellectual growth is most influenced by one's personal intellectual activities (Dimitriadis & Kamberelis, 2006). It was in this context that this research study aimed to establish how educators constructed their own knowledge about ADHD based on their experiences and interactions with learners in a classroom setting.

1.9.4 Research design

This research study followed a qualitative methodological design. A qualitative research design was deemed effective as it was used to gain an understanding of the underlying opinions and motivations of the research participants and the reasons they gave for various behaviours. According to Pope and Mays (2000), qualitative research assists the researcher to gain insight into the problem under investigation. Thus a qualitative research methodology was used to uncover trends in thought and opinions and to look deeper into the problem at hand. I designed my research as a case study and I used a questionnaire, interviews and document analysis to collect the data. By using this variety of tools, I was able to analyse the views of various individuals, which resulted in my in-depth understanding of the topic under study. The number of participants that were involved as the sample was adequate to allow the elucidation of valid findings. I used the purposive sampling technique to select my sample as this enabled me to link my sample purposively to the research objectives and questions.

1.9.5 Data generation

Data were collected from eight educators who taught various subjects to a particular Grade 8 class as it was assumed that they would have identified learners with symptoms of ADHD in that particular group. The information that these educators shared was then compared to establish patterns of behaviour among specific learners. The educators were asked to respond to a questionnaire to determine how knowledgeable they were about ADHD. Thereafter, an interview was conducted with each participant to establish their insight and knowledge regarding the symptoms that the learners of this particular group displayed that might have been indicative of ADHD. It is acknowledged at this point that these educators were not trained practicing psychologist or medical practitioners, but it was assumed that they would be able to identify the traits, characteristics and particular behaviours associated with ADHD. The interviews were recorded with the permission of the participants and transcribed. The use of various data collection instruments ensured that I was able to obtain rich and valid findings.

1.9.6 Data analysis methods

Once the questionnaires had been completed and the interviews had been conducted, the process of data analysis began. The English language was used throughout the process of data collection and analysis. I first transcribed the audio recordings of the interviews into written text. I then read the written transcripts numerous times to ensure that I would identify important issues and themes that emerged from the data. I then linked these themes to the literature for validation. Concepts were grouped, related and categorized accordingly. The findings that were related to the identified themes were then recorded and analysed using an interpretive method. All the findings are presented thematically in this study report.

1.10 Challenges and Limitations

All research endeavours experience both problems or challenges and limitations. One of the challenges that I encountered was a lack of available South African literature on the topic of this study. Moreover, although extensive international literature was available on the ADHD phenomenon, there was a paucity of literature pertaining to this condition among learners in rural schools and particularly among learners in the progression stage from primary to high school. However, as this study dealt adequately with this gap in the research, my research study will certainly add to the body of knowledge pertaining to this issue. I also used a variety of aids to find literature to ensure that I had the necessary content for comparison and verification of the data.

Another challenge was that, during the interviews, my participants felt a sense of nervousness that might have resulted in a reluctance to respond openly and frankly. I therefore reassured them that they should feel safe to respond, as their identities would remain anonymous. However, a few potential participants exercised their right to withdraw from the research. I thus safeguarded the body of data that was required by increasing the sample size, and I had sufficient data to analyse and to address the objectives of the study. I therefore overcame the problems that I faced during my research study, thus resulting to the success of this research.

In terms of limitations, it must be acknowledged that the sample size was too small to generalize the findings to all rural schools. These findings may thus only be regarded as snapshots of the larger phenomenon. However, as the validity and trustworthiness of the findings were assured, future researchers may use the findings with confidence as a springboard for more in-depth investigations into the ADHD phenomenon, particularly in rural schools.

The study was also limited to Grade 8 educators and excluded learners', other grade teachers' and parents' views. It is acknowledged that the perceptions and experiences of these persons may have contributed to more extensive findings pertaining to the topic under investigation, but such a study was not possible within the scope and time limitations of the envisaged study. Recommendations for future research will be offered in this regard in the final chapter.

1.11 Overview of the Chapters

Each chapter of this study report provides information on different aspects of the research that investigated educators' knowledge and understanding of ADHD. This overview of the chapters summarises what may be expected in each chapter.

Chapter 1 presents a background and introduction to the study. I briefly describe what the research is about and give particular details of the study location. I discuss the purpose of the study and refer to my objectives and the key questions that gave impetus to the study. Chapter 1 also highlights the study approach and introduces the research methodology, the paradigm, the theoretical framework, the research design, and the processes of data collection and data analysis. I conclude by frankly describing the problems that I experienced and I elucidate the limitations that impacted this research study.

Chapter 2 presents the literature review and provides information on ADHD. It is rich in knowledge about and information on ADHD as well as educators' knowledge and understanding of the disorder. I include views from various stakeholders on this topic. This provides information on what ADHD is, the causes of ADHD, the symptoms of ADHD, as well as the diagnosis and treatment of ADHD. I also discuss how ADHD impacts teaching and learning and provide information on educators' knowledge and understanding of ADHD. Intervention strategies that educators can use to accommodate learners with ADHD in the classroom are also discussed. The literature review provides views from many different sources and these views are discussed extensively. Chapter 2 also discusses the theoretical framework that was used to outline this research study. I introduce the constructivism learning theory and discuss how it is relevant to the study.

Chapter 3 describes the methodology that was employed to conduct the research study. I analyse the research design and explain the sampling procedures and research instruments. Chapter 4 also gives a brief description of the profiles of the participants. I thereafter present the ethical

considerations that were adhered to and discuss the credibility, trustworthiness, confirmability and dependability of the study.

Chapter 4 presents an in-depth discussion of the data that were analysed and the findings. I present the data that were obtained by means of a questionnaire and interviews and the viewpoints and experiences of the participants are discussed and analysed.

Chapter 5 offers and discusses my conclusive findings. This chapter also provides brief recommendations of the steps forward and what can be done to improve educators' knowledge and understanding of ADHD that will impact their teaching practices positively.

1.11 Conclusion

This chapter provided a brief introduction and background to my research study. I have discussed the reasons behind this study and what I aim to achieve by conducting this research. The location of the research was discussed, as well as the research approach. I also have included an overview of each chapter that is to follow. This chapter provided an insight of what this research study will entail. The next chapter presents a review of literature as well as the theoretical framework for this study.

CHAPTER 2

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

Attention deficit hyperactivity disorder (ADHD) is a developmental disorder that affects both adults and children. It results in the inability to pay attention for a prolonged period of time and promotes hyperactive and impulsive behaviour. It was therefore deemed crucial to gain in-depth understanding of this phenomenon in the context of a rural school as limited information is available of this condition in such schools. This chapter reviews literature on the definitions of ADHD; it highlights the causes and symptoms of the disorder, and discusses numerous methods of diagnosis and treatment of this disorder. I have discussed how ADHD impacts teaching and learning by highlighting educators' required knowledge and understanding of ADHD and the impact of a lack thereof. I have also provided an insight into the intervention strategies that educators can adopt to accommodate learners with ADHD in the general education classroom. I have included the theoretical framework that guided my research study. This chapter further discussed how the constructivist learning theory by Jean Piaget was relevant to my research.

2.2 What is ADHD?

Attention deficit hyperactivity disorder (ADHD) is the current term for a specific developmental disorder seen both in children and adults. It is characterised by deficits in behavioural inhibition, sustained attention and resistance to distraction, and the regulation of one's activity level to the demands of a situation (hyperactivity or restlessness) (Barkley & Murphy, 2006). This disorder has had numerous different labels over the past century, including hyperactive child syndrome, hyperkinetic reaction of childhood, minimal brain dysfunction, and attention deficit disorder (with or without hyperactivity) (Barkley & Murphy, 2006). ADHD is a neuro-behavioural condition characterised by excessive restlessness, inattention, distraction, and impulsivity (American Academy of Child and Adolescent Psychiatry & American Psychiatric Association, 2004). Wheeler (2010, p. 1) defines ADHD as follows:

“Attention deficit hyperactivity disorder (ADHD) is a medical diagnosis that is applied to children, young people and adults who are experiencing significant behavioural and cognitive difficulties in

important aspects of their lives. These difficulties can be attributed to problems of inattention, hyperactivity and impulsivity”.

ADHD is said to be one of the most common childhood or brain disorders and can continue throughout adolescence and adulthood (Shaw, Eckstrand, Sharp, Blumenthal, & Lerch, 2007). According to Barley (2006), ADHD occurs in approximately 3% - 7% of the childhood population and in approximately 2% - 5% of the adult population. Among children, the gender ratio of ADHD is approximately 3:1, revealing that ADHD affects boys more often than girls. Among adults, the gender ratio is 2:1, once again revealing that ADHD affects males more often than females.

Various symptoms are associated with ADHD, such as difficulty staying focused and paying attention. Individuals with ADHD will also suffer difficulty controlling behaviour and hyperactivity (American Academy of Child and Adolescent Psychiatry & American Psychiatric Association, 2004). ADHD is broken down into three different subtypes. These are: predominantly hyperactive-impulsive, predominantly inattentive, and combined hyperactive-impulsive and inattentive. Predominantly hyperactive-impulsive behaviour causes an individual to be excessively restless and impulsive, whereas predominantly inattentive causes an individual to be distracted and they have a short attention span. The combined hyperactive-impulsive and inattentive ADHD comprises of symptoms from both these subtopics and the majority of children affected by ADHD suffer from this type of the disorder (American Academy of Child and Adolescent Psychiatry & American Psychiatric Association, 2004).

According to Barkley (2006), it has become possible since 1980 to place those with ADHD into several subtypes depending on the combination of symptoms they experience. Barkley (2006) states that those that have difficulties primarily with impulsive or hyperactive behaviour and not with attention are referred to as belonging to the predominantly hyperactive impulsive type. However, individuals with a significant inattentiveness without being impulsive or hyperactive are referred to as belonging to the predominantly inattentive type. However, most individuals with the disorder will display both features and therefore be referred to as having the combined type of attention deficit hyperactivity disorder (Barkley, 2006). Barkley (2006) further claims that, those individuals that are diagnosed with either the predominantly hyperactive impulsive type of ADHD or predominantly inattentive type of ADHD will show symptoms of that particular type at a younger age, therefore diagnosis is made and as the years go by, the individual will start to display the adverse, resulting in the diagnosis of having the combined type of ADHD. Attention

deficit hyperactivity disorder (ADHD) is a common condition that can be treated. It is a health condition involving biologically active substances in the brain. Studies show that ADHD may affect certain areas of the brain that allow us to solve problems, plan ahead, understand others' actions and control our impulses (Rabiner, 2006). According to Rabiner (2006) ADHD is a disorder associated with a continuous pattern of inattention and/or hyperactivity and/or impulsivity that occurs in academic, occupational and social settings. Rabiner (2006), states that the problems with attention may result in making careless mistakes and being easily distracted, whereas the problems with hyperactivity will include excessive fidgetiness, running and climbing when it is not appropriate and talking excessively. Rabiner (2006) further claims that impulsivity can show up as impatience, difficulty awaiting one's turn, blurting out answers and frequent interruption.

There are many major characteristics with predominant features to ADHD. According to Barkley (2006), impaired response inhibition, impulse control or the capacity to delay gratification are common characteristics of ADHD. A child that is affected by the disorder will often display inability to stop and think before acting, to wait his or her turn during games, conversing with others or having to wait in line. The child will have difficulty to resist distractions or to concentrate on a particular task. Barkley (2006) further claims that individual with ADHD are excessively fidgety and restless. They will display excessive movement when completing any given task. Younger children with the disorder may show excessive running, climbing and other gross motor activity. This characteristic may tend to decline with age but even teenagers with ADHD are more restless and fidgety than their peers. Individual affected by ADHD often fail to show the same level of persistence, motivation and will-power of others their age when uninteresting, yet important tasks are given. These individuals will shift their attention from one uncompleted task to another without completing any of these activities. They seem to lose interest very quickly. This creates a serious problem, especially in the classroom, as they are easily distracted during periods when concentration is important to the task at hand (Barkley, 2006). Barkley (2006) further states that, they may have problems with completing routine assignments without direct supervision, being unable to stay on task during independent work. This creates a distraction to other learners and the classroom task as a whole.

2.3 Causes of ADHD

According to the National Institution of Mental Health (2001), many studies suggest that genetics is the main cause of ADHD; however, the institution claims that there isn't just one cause; but a

combination of different factors that contribute to the cause of ADHD. In addition to genetics playing a crucial role in the cause of ADHD, researchers are looking at how possible environmental factors, brain injuries, nutrition and social environments may contribute to ADHD (National Institution of Mental Health, 2001).

The National Institution of Mental Health (2001) adds that there have been several international studies involving twins that reveal that ADHD is linked to genetic makeup as ADHD often runs in families. According to Barkley (2000), there are approximately 40% of children with ADHD that has at least one parent with symptoms of the disorder, 35% has a sibling with the disorder and more than 80% that have an identical twin are also affected . Therefore researchers are now looking at several genes that may make people more likely to develop the disorder. This knowledge will help prevent the disorder before the symptoms develop. This could also lead to the availability of better treatments for those affected by ADHD (National Institution of Mental Health, 2001). Du Paul and Stoner (2003) suggest that hereditary and neuro-biological factors are key factors as the causes to ADHD. The National Institution of Mental Health (2001) further claims that a study was conducted on children with ADHD and found that those who carry a particular version of a certain gene have thinner brain tissue in the areas of the brain associated with attention. However, as the children grew up the brain then developed to a normal level of thickness. This resulted in an improvement of ADHD symptoms.

The National Institution of Mental Health (2001), states that children who have suffered a brain injury may show symptoms similar to ADHD. However, there are only a small percentage of children with ADHD that have suffered a traumatic brain injury. The National institution of Mental Health (2001) adds that sugar and food additives are often noted as the cause of ADHD, but many research studies discounts this theory. There is no concrete evidence to show that these components are key causes of ADHD. However, there are a small number of children with ADHD that are sensitive to food additives, although it isn't the cause to the disorder. Environmental factors also play a role in the causes of ADHD. Studies have shown that there is a potential link between cigarette smoking and alcohol use during pregnancy and ADHD children. Similar research studies further reveal that younger children who are exposed to high levels of lead have a higher risk of developing ADHD. Lead could be found in plumbing fixtures or the paint in old buildings. This is a significant cause of ADHD and can be avoided if the child is exposed to a positive environment (National Institution of Mental Health, 2001). According to Du Paul and Stoner (2003), environmental factors such as family stress, poor parenting and dieting may increase the severity of ADHD if a child has the disorder.

2.4. Symptoms of ADHD

The National Institution of Mental Health (2001) highlights the key symptoms of ADHD by distinguishing the different symptoms of inattention, hyperactivity and impulsivity as these are the key behaviours of ADHD. It is important to note that it is normal for all children to be inattentive, hyperactive or impulsive at some time. However, children affected by ADHD will have a more severe case of inattention, hyperactivity and impulsivity and this behaviour will occur more often. In order for a child to be diagnosed with ADHD, a medical examination has to be conducted. A child must have symptoms of ADHD for more than six months and these symptoms must be to a degree that is greater than other children of the same age.

A child who is affected by ADHD may show signs of excessive inattention and be easily distracted. The child may miss details and forget things on a regular basis. The child will always change activities from one to another as he or she will not be able to focus on just one thing. The child will show signs of boredom after a few minutes of doing a specific task and will have difficulty focusing, organizing and completing a task. At school, the child may always have trouble completing his or her homework and often lose their stationery and other school equipment. The child will often daydream, not listen when spoken to, and become very easily confused. This will result in a struggle to follow instructions.

With regard to hyperactivity, a child with ADHD may continuously fidget and move and shift on the seat. He/she will speak out of turn and will be touching and playing with anything in sight. The child will have severe difficulty sitting still during a meal, in a classroom or at home and will be in motion at all times. Such a child is unable to complete a quiet task or activity. Lastly, impulsivity is also a crucial symptom of ADHD. A child affected by ADHD will always be very impatient; they will blurt out inappropriate comments and show their emotions without any restraint. The child is impulsive and shows no regard for the consequences of their actions. They often interrupt conversations and others' activities as they have difficulty waiting their turn (National Institution of Mental Health, 2001).

2.5 Diagnosing ADHD

The Diagnosis and Statistical Manual of Mental Disorders (DSM-IV) is used to formally diagnose ADHD. According to this medical classification system, ADHD can be diagnosed if an individual has six or more symptoms of inattention, hyperactivity or impulsivity for at least six months. The

individual must have hyperactive-impulsive or inattentive symptoms prior to six years of age. The impairment must be present in more than two settings and the impairment must be clinically significant in social, academic or occupational environments. The symptoms must not occur exclusively in pervasive developmental disorder, schizophrenia or other psychotic disorders, or are not better accounted for by another mental disorder (American Academy of Child and Adolescent Psychiatry & American Psychiatric Association, 2004). In most cases, individuals affected by ADHD will present both inattention and hyperactivity; however, there are cases where one symptom may predominate. ADHD does not only affect younger children, but can be present in adolescents and adults. The symptoms have to be continuous for a period of at least six months for a diagnosis to be confirmed (American Academy of Child and Adolescent Psychiatry & American Psychiatric Association, 2004).

2.6 Treatment of ADHD

No treatment has yet been found to cure ADHD. However, numerous treatments exist that can effectively assist with the management of ADHD. One of the main treatments of ADHD is the education of the family and school staff. They should be educated about the nature of the disorder and its management (Barkley, 2006). According to Barkley (2006), there are treatments that result in the greatest degree of improvement of the symptoms of ADHD in the form of stimulant medications. Some of these stimulant medications include methylphenidate (Ritalin), d-amphetamine (Dexedrine), Adderall, and in rare cases pemoline (Cylert). Evidence has also revealed that tricyclic antidepressants such as desipramine may also be effective in managing symptoms of ADHD. However, the antidepressants are less effective than the stimulant medication (Barkley, 2006).

There are numerous controversial viewpoints on the use of stimulant drugs to treat ADHD. Many parents believe that ADHD medication slows down the development of the child and that there are too many side effects associated with these drugs. Bursztyn (2011) claims that there are many concerns about stimulant medication given to children with ADHD, as many prescribed medications have a similar chemical structure to cocaine and prolonged use may cause ADHD children to be addicted to drugs as they get older. However, studies have revealed that individuals who have been on Ritalin for a prolonged period of time are not highly likely to use drugs (Bursztyn, 2011). This on-going controversy of ADHD stimulant medication is a debate with valid points on each side. However, it is the prerogative of the parent to make the decision whether to administer any medication or to use alternative regimes to support their children.

Barkley (2006) further claims that it is important to note that ADHD should be viewed as any other chronic medical condition that requires on-going treatment for effective management although the treatment does not rid the individual of the disorder. Treatment of ADHD must be combined with psychological treatments and maintained over long periods of time so that it can sustain the initial treatment results. Some of the most effective psychological treatment methods are behaviour modification in the classroom and parent training in child behaviour management. The only downfall to psychological treatment is that the improvements only occur in the particular setting where the treatment is administered (Barkley, 2006). Therefore, behaviour modification will only be effective in the classroom setting and parent training in child behaviour management will be effective in the presence of the parent in the particular setting of the home.

2.7 The impact of ADHD in teaching and learning

According to Brock (2002), the attention deficit hyperactivity disorder (ADHD) affects up to 7% of the population and is regarded as one of the most common childhood behaviour disorders. Because the primary symptoms of ADHD are hyperactivity, impulsivity and inattention, various problems occur in the classroom where sustained attention and discipline are usually prerequisites for teaching and learning to occur effectively. Various classroom behaviours will manifest as symptoms of ADHD such as consistently calling out, inability to remain seated, and constant interruption of classroom activities.

Hyperactive children always seem to be in motion. They may constantly move around, touching and playing with various objects that they find. They will also talk incessantly. During classroom activities or lessons, the child that has ADHD will fidget or get up and move around the classroom. He or she will disrupt the lesson. They may feel restless and need to stay busy at all times (American Academy of Child and Adolescent Psychiatry & American Psychiatric Association, 2004). Impulsive children often blurt out comments without thinking first. They act on their impulses without thought about their actions or the consequences of their actions. They may display their emotions without restraint. Children with ADHD will therefore find it difficult to wait in line or take turns in the classroom. Impulsive children tend to make decisions that have small immediate benefits rather than working towards larger delayed rewards (American Academy of Child and Adolescent Psychiatry & American Psychiatric Association, 2004). Inattentive children may quickly get bored in the classroom and may find it difficult to complete an activity unless it is something that they really enjoy doing. Children with ADHD may find that organizing and completing a task or learning something new is difficult for them. Their inattention

causes them to often forget to write down an assignment or bring a book to school. Completing their homework may also be a huge challenge. Children with ADHD can be easily distracted, make careless mistakes, forget things, have trouble following instructions, and they skip from one activity to the next without completing the first one (American Academy of Child and Adolescent Psychiatry & American Psychiatric Association, 2004).

Brock (2002) states that learners affected by ADHD require behavioural interventions especially in the classroom to ensure that the classroom can be managed effectively. Brock (2002) highlights that learners with ADHD are heterogeneous, therefore there isn't a single intervention or group of intervention strategies that will work for all learners with ADHD. He further states that it is necessary that classroom modification be tailored to suit the needs of individual learners with ADHD (Brock, 2002). Individuals with ADHD have difficulty staying focused and paying attention; they are unable to control their behaviour and are hyperactive. Therefore, these symptoms make it difficult for a child with ADHD to complete a given task, get along with other children or adults, or succeed in school. Shaw, Eckstrand, Sharp, Blumenthal and Lerch (2007) further state that brain imaging studies have shown that, in adolescents with ADHD, the brain matures in a normal pattern, but is delayed by an average of three years. This delay occurs in the region of the brain that involves thinking, paying attention and planning.

Children with ADHD experience countless chronic behavioural and academic difficulties. Therefore, if the symptoms and behavioural patterns among rural children are similar to those of children in urban populations, then educators may have underestimated the impact of ADHD on children (Miller, 2005). Miller (2005) highlights the fact that research has not provided adequate data on children with ADHD in rural communities. For this reason, there are disparities in identification, access to treatment, and reports of the manifestations of ADHD and its co-existing conditions in rural children (Miller 2005). This study attempted to bridge this gap to some extent.

Kleynhans (2005) claims that educators are seen as one of the most valuable sources of information with regards to referral and diagnosis of ADHD, as children spend most of their time in classrooms and other school settings. Kleynhans (2005) further claims that 5% of South African children have ADHD and that it is the most common psychiatric disorder amongst children in South Africa. She adds that it is safe to assume that there will be at least one child in every classroom in every school that has ADHD (Kleynhans, 2005). In the absence of independently validated tests for ADHD, educator referrals have become a crucial factor in determining whether a child is diagnosed with ADHD. The educator will notify the parent to have the child evaluated

based on the symptoms associated with ADHD (Kleynhans, 2005). Therefore, in order for the educator to be able to identify symptoms of ADHD, the educator needs to have sufficient knowledge and understanding of the disorder. Achterberg (2008) notes that educators have the responsibility to ensure that all learners reach their full potential; therefore, it is the duty of the educator to provide reasonable strategies, accommodations and resources to enable all learners, including those with ADHD, to receive proper education. Children with ADHD need support to help them pay attention, control their behaviour, slow down, and feel better about themselves as this will result in their improved academic and holistic development.

2.8 Educators' knowledge and understanding of ADHD

The literature review has revealed a lack of research in South Africa on educators' knowledge and understanding of ADHD. However, numerous international studies have taken this phenomenon under the loop. For example, research that was conducted in Denmark about the knowledge that both primary and secondary school educators had about ADHD revealed that educators' knowledge of ADHD was very limited. It was thus concluded that educators needed more knowledge about the characteristics, prognosis and treatment of ADHD (Jensen et al., 2015). Perold, Louw and Kleynhans (2010) further claim that the knowledge that educators have about ADHD may influence how they communicate with and teach children with the disorder. Educators having a better understanding of ADHD will thus enable them to change their classroom management, to adapt the curriculum, to have realistic expectations, and be able to create a positive learning environment for learners with the disorder. According to Abramowitz, Am & O' Leary (2009), most educators do not know how to teach learners who have ADHD and lack a basic understanding of the nature of the disorder as well as the basic skills in classroom management. The educator sometimes manages the behaviour of learners with ADHD rather than modify their tasks and manipulate their physical environment. Educators must be familiar with the treatment options, behaviour interventions and classroom modification techniques that are effective when teaching learners with the disorder. Perold, Louw and Kleynhans (2010) argue that although some educators are familiar with the primary symptoms of ADHD, they often base their reasons for referral on these primary symptoms. The problem with this approach is that these primary symptoms have poor predictive value. Therefore, being familiar with ADHD cannot be seen as having adequate knowledge of the disorder.

Jensen et al. (2015) urge that policy makers should ensure that resources are made available for educating educators about ADHD, especially now that it is becoming more common for ADHD

children to be included in mainstream classrooms. This is a vital point, especially as it is crucial that inclusive education is effective for *all* learners. Thus educators need to have knowledge of ADHD in order to create a positive environment that is conducive for learning by learners with this disorder, and this should ultimately lead to equal opportunities for those with developmental disorders and improve the work environment for educators (Jensen et al., 2015).

According to Youssef et al. (2015), educators are the first persons responsible for identifying children with ADHD; however, educators' overall knowledge of ADHD is significantly low. Therefore, there is a need for educators to become more educated about ADHD and better equipped to deal with children affected by the disorder. Brooket al. (1999) state that educators' knowledge and understanding of ADHD is insufficient. Although educators have a relatively tolerant attitude towards learners that have ADHD, they seem to lack information about the causes, symptoms and treatment of the disorder. This could be a result of the lack of training that educators receive on ADHD during their initial educator training programs as well as during their years of teaching. Therefore, it is important for educators to be exposed to training on ADHD and how to incorporate children with ADHD in effective classroom strategies (Jensen et al., 2015).

According to Wheeler (2010, p. 30), "the perceptions and knowledge of educators and their attitudes towards ADHD could have implications for the delivery of suitable educational provision for individuals with the disorder". It is thus important that educators are provided with opportunities to increase their knowledge of ADHD. A recent international school survey revealed that 88% of the educator population that responded to the survey had not received any training in ADHD (Wheeler, 2010). The lack of educator knowledge of ADHD creates difficulty in promoting effective teaching modifications to accommodate learners with ADHD. In order for effective teaching approaches to be put into practice, there is a need for educator education in this area, both in the initial educator training stage and as part of continuing professional development (Wheeler, 2010).

According to Schirduan, Shearer and Case (2009), it is difficult for educators not to be mindful of learners with ADHD as these learners exhibit classic characteristics of inattention, impulsivity and hyperactivity. Educators describe learners with ADHD as difficult to teach and complain that they blurt out answers before a question has been completed. They bounce out of their seats and are inattentive when provided with classroom direction. Schirduan et al. (2009) further state that educators are unaware of how to teach learners with ADHD, therefore they often seek counsel from other school professionals. However, the advice that they are given is often quite

conventional, such as provide a quiet, distraction-free place to work and place the learner near the front of the classroom next to a positive role model. This advice may be beneficial at first, but it is not enough. Additional steps may need to be taken to manage inattention, impulsivity and hyperactivity and numerous educators do not have the necessary knowledge and skills to address these steps (Schirduan et al., 2009). Therefore, it is important to note that educators who are expected to accommodate learners with ADHD should themselves be able to expect systematic assistance in the forms of consultation and support services for the design, implementation and evaluation of classroom-based interventions (DuPaul & Stoner, 2003). Educator support systems are critical to the successful education of learners with ADHD, as educators tend to express feelings of frustration and helplessness when attempting to manage classrooms that are consistently disrupted by learners with ADHD (DuPaul & Stoner, 2003). The implementation of educator support systems will require professionals with assessment and program development expertise, educators with supervisory or administrative rank and responsibilities for monitoring on-going educational programs, and personnel to provide intervention assistance as needed in support of regular classroom staff. This type of commitment to educator support would be coupled with staff that is knowledgeable and skilled in the areas of instructional and behavioural support (DuPaul & Stoner, 2003). Educator support systems will ensure that all educators are knowledgeable when dealing with ADHD cases in the classroom.

According to Bekle (2004), educators and parents must be well informed about ADHD in order to work together to find a satisfactory management solution. Bekle (2004) further recommends that collaboration among parents, learners, professionals and educators is vital for the early and accurate identification of children with ADHD. It is important that educators are not only familiar with different behavioural strategies and interventions, but also with the methods of academic instruction that are appropriate for learners with ADHD. Bekle (2004) adds that educators' attitudes and knowledge of ADHD can influence classroom practices that, in turn, can affect the performance of learners with ADHD. Therefore, it is crucial that educators have factual knowledge and realistic attitudes about ADHD in order to achieve success in the classroom.

Research conducted by Jerome, Gordon and Hustler (1994) surveyed a sample of 439 American educators and 850 Canadian educators on their knowledge of and attitudes towards ADHD. The results of this survey indicated that 89% of the American educator sample and 99% of the Canadian educator sample reported a lack of opportunity to learn about ADHD. Jerome et al. (1994) claim that 94% of the educators from the sample regarded ADHD as a legitimate special education problem in schools. This study revealed that educators had many misconceptions of

ADHD, as 66% of the sample believed the misconception that sugar causes ADHD and approximately 50% of the educators incorrectly believed that ADHD is outgrown by adolescence (Jerome et al., 1994). A similar study was conducted in Australia by Bekle (2004), who revealed that although educators' knowledge of ADHD had increased over the years, there were still many gaps in their knowledge, especially with regard to ADHD misconceptions and myths. Similar to the American study, many educators still believed that ADHD was caused by sugar and food additives and that ADHD was outgrown during adolescence. The surveyed educators also performed very poorly on questions relating to dietary treatment of ADHD (Bekle, 2004). Bekle (2004) found that educators' knowledge about ADHD positively correlated with their general attitude towards the condition, and therefore argues that any negative or rejecting attitudes may be changed through exposure to information on ADHD. The majority of the educators involved in the latter research study acknowledged that ADHD was a legitimate educational problem and urged that ADHD information be incorporated in the initial educator training program so that future educators would have the knowledge and skills to effectively address the needs of learners with ADHD in their classrooms (Ibid). The study further found that the knowledge of and attitudes towards ADHD improved among practicing educators and that this occurred concomitantly with the number of learners with ADHD taught. Therefore, educating educators about ADHD will improve the ability of these learners to learn as more effective classroom strategies will be employed, and these teachers will also be able to assist in the design and implementation of appropriate school programs, monitoring practices, and the enhancement of behaviour modification programs that parents may follow at home. Most importantly, these teachers will aid with the early detection of the disorder (Bekle, 2004). It is important to note that the only manner in which a child may be diagnosed with ADHD is if he/she is examined by a trained professional; however, if an educator is knowledgeable about ADHD and its key symptoms, the educator can highlight these behavioural symptoms to the parent so that the parent can undertake the necessary procedure to ensure the accurate diagnosis of the disorder. This will be beneficial to the child, as the child will be able to receive the required assistance.

Schoes, Reid, Wagner and Marder (2006) also highlight the need to address the education of educators regarding ADHD. The latter authors state that the need for educator training is obvious, particularly among general education educators. There are many learners with ADHD in general education classrooms, therefore it is evident that not only special education educators work with learners with ADHD. It is thus important that all educators obtain basic information about ADHD, including effective behavioural interventions, accommodations, and the effects of common

ADHD medication. They also uncovered a lack of knowledge about this disorder among educators (Ibid.).

Topkin, Roman & Mwaba (2015) further claim that ADHD is one of the most common chronic conditions of childhood, and that teachers are a valuable source of information with regards to referral and diagnosis of the disorder. Topkin, Roman & Mwaba (2015) conducted a research with 200 South African primary school educators on their knowledge of the symptoms and management of children in their classrooms who were diagnosed with ADHD. The results of this study revealed that only 45% of the participants correctly identified the responses to the items asked in the questionnaire of the research (Topkin, Roman & Mwaba, 2015). The research study also revealed that educators were more knowledgeable of the general associated features of ADHD, but not the symptoms, diagnosis and treatment of the disorder (Topkin, Roman & Mwaba, 2015).

According to Martinussen, Tannock, Chaban, McInnes and Ferguson (2006), it is important for educators to recognise that the symptoms of ADHD occur on a continuum, thus learners may exhibit mild, moderate or severe behavioural symptoms of ADHD. Therefore, there may be several learners in a classroom who exhibit some problematic behavioural symptoms but who do not meet the diagnostic criteria for ADHD and will not be eligible for medical treatment. It is therefore crucial that educators have sufficient knowledge and understanding of ADHD to ensure that they are able to use classroom intervention strategies to cater for mild cases of ADHD. This will result in effective management of the symptoms of the disorder in the classroom which will in turn enable optimal teaching and learning. Martinussen et al. (2006) add that there are several implications for education with regard to ADHD, and that it is important that educators carefully monitor the academic achievement of learners with ADHD, particularly if they exhibit symptoms of inattention, as these learners are at high risk for poor academic outcomes. Martinussen et al. (2006) state that intervention programs by educators for learners with ADHD should address multiple areas of need and not only focus on the reduction of the negative behavioural symptoms. Therefore, only knowledgeable educators will be able promote effective intervention programs to assist learners with ADHD holistically. Martinussen et al. (2006) further state that it is important for educators to incorporate instructional and behavioural management approaches to facilitate the full engagement of learners with ADHD. For this reason it is crucial that educators are knowledgeable about ADHD. Studies of educator knowledge and beliefs regarding ADHD have generally found that educators often hold misconceptions regarding ADHD as a result of a lack of training opportunities (Ibid.). General education educators often do not feel confident in their

ability to develop instructional and behavioural plans for children with ADHD and they experience high levels of stress when they have to teach learners with ADHD (Ibid.). When an educator experiences stress in the presence of a particular learner, it results in a negative learner-educator relationship that will adversely impact the academic performance of the learner and the educator's ability to teach effectively. According to Martinusse et al. (2006), if the educator is knowledgeable about dealing with learners with ADHD, it will result in a positive classroom environment that will in turn ensure improved academic performance.

Educators with adequate knowledge of ADHD have confidence and experience low stress levels when working with learners with ADHD (Ibid.). Educators' knowledge of ADHD has been found to be significantly related to how they teach in the classroom. For example, educators who are knowledgeable about ADHD use more positive instructional teaching strategies in the classroom compared to educators who lack knowledge of ADHD (Ibid.). This strengthens the call for educators to receive training on ADHD to ensure effective classroom management and to promote support for learners affected by ADHD.

The literature clearly revealed a lack of knowledge and understanding of ADHD amongst educators. It was also clear that educators are not sufficiently trained to understand ADHD during their initial teaching training program as well as during their practicing years. It may thus be argued that most of the knowledge that educators have regarding ADHD is derived from their experiences of working with learners that have ADHD.

Bekle (2004) states that, although there is no cure for ADHD, a combined treatment of medication and behavioural therapy can help the learner succeed in school. Educators therefore need to be well informed about the disorder in order to work together with the parent/s to develop an effective behavioural management solution. Educators should have realistic and factual information about ADHD. Bekle (2004) adds that educators' attitude towards learners with ADHD relates directly to learner success; likewise, educator knowledge of ADHD and appropriate teaching practices influence teaching performance, educator expectation, and learner achievement.

2.9 Strategies that can be used to accommodate learners with ADHD in the classroom

2.9.1. The educator

Children between the ages of 5 to 17 spend most of their time with their educators as they engage with one another almost on a daily basis. When the child starts school, these daily interactions

provide opportunities for the educator to observe the child or young adult in an educational setting over a period of time. The educator is then able to reach conclusions about learners' strengths and the challenges they experience in their academic, social and behavioural spheres. Wheeler (2010, p. 26) states that "educators are in the best position to compare the child's academic progress and behaviour with his or her peers". The educator thus plays a vital role in the life of a learner with ADHD. Ingersoll (1998) refers to this relationship as follows:

"The most effective educators of ADHD children understand that their relationship with the child is the single most powerful agent of change available to them. The educator's tolerance level and skill in working with children who march to a different drum are critical factors in how well the ADHD child behaves in her [or his] classroom."

It is the role of the educator to set the tone and style in the classroom. Therefore, to ensure a positive learning environment that is conducive to an effective teaching and learning experience for all learners – especially learners with ADHD – the educator must offer support. The educator can provide support by enforcing inclusive education measures in the classroom.

2.9.2. The classroom

According to the South African Education White Paper 6 (Department of Education, 2001), inclusive education is about acknowledging that all children and youths can learn and that they all need support. It is about accepting and respecting the fact that all learners are different and that they have different learning needs. Inclusive education enables education structures, systems and learning methodologies to meet the needs of all learners and should encourage the change of attitudes, behaviours, teaching methodologies, curricula and the teaching and learning environment to meet the needs of all learners despite their differences. Education White Paper 6 further highlights that some learners may require more intensive and specialized forms of support to be able to develop to their full potential. Moreover, there are structures in place that will assist educators to ensure that they are instrumental in this process (Ibid.).

Inclusive education is collaboration between regular and special educators to introduce new teaching methods into the general education setting. Every child comes to school with a unique set of gifts and talents that they can contribute to the group of learners in a classroom. Inclusive education allows schools to recognize these gifts and to value each individual, including those learners with ADHD. Inclusive schools welcome all learners regardless of ethnicity, culture, economic status, learning style or ability. "Although it takes a lot of vision, teamwork, flexibility,

training and planning for inclusive education to be effective in the classroom, the rewards are great and every learner benefits when the main focus is on inclusion” (Thousand & Villa, 2000, p. 6). Therefore, inclusive education can be used to develop classrooms where children with ADHD can be supported. For educators to create an environment conducive to successful learning for learners with ADHD, it is important that they have a sound knowledge of the nature of ADHD and the skills to manage ADHD-type behaviour in the classroom (Yarde-Leavett, 2018). A South African research by Sciutto and Bender (2000) concluded that teachers’ knowledge of ADHD is significantly low.

It is important that educators seek support when they lack the knowledge to work with learners who experience difficulties in learning, such as those with ADHD. Educators should work together with other members of the staff as well as relevant community members or structures to meet the needs of all learners. According to Booth and Ainscow (2002, p. 3),

“...teaching is about learning, it is learning about our learners, it is learning about what works. It acknowledges that teaching is a part of an interactive process where learners and their educator explore the world around us in order to make sense out of it.”

Therefore, educators should seek the necessary help that they require to be able to provide an inclusive classroom environment to cater for learners with ADHD.

There are various effective intervention strategies that educators can use within the teaching and learning process to accommodate learners with ADHD in the classroom. According to Barkley (2000), to enhance education at school when working with learners with ADHD, educators must ensure that all rules and instructions are clear, brief and possibly physical. This can be done in the form of charts or other visual reminders. The educator must also allow the learner to repeat the instructions out loud so that he or she will be able to follow through on the activity.

Barkley (2000) states that the educator must be well organized, systematic and well planned when enforcing rewards, punishment and feedback. This is very effective when done swiftly and immediately. To ensure that the child follows rules and instructions, there must be frequent feedback and any consequences must be explained to the child. Barkley (2000) further states that children with ADHD are less sensitive to social praise and reprimands, so the consequences for good or bad behaviour must be more powerful than those needed to manage the behaviour of learners without ADHD. The educator must ensure that the rewards and incentives are put into place before the punishment so that the learner does not see school as a negative place. The

rewards and incentives should also be much more gratifying than the punishment so that positive behaviour is promoted (Barkley, 2000). The rewards should also change frequently as children with ADHD become bored easily. Barkley (2000) claims that many educators tend to give up on the reward system because they think it is not working on learners with ADHD; however, this is because the learner with ADHD loses interest in the reward much faster than learners without ADHD. For effectiveness, educators that have learners with ADHD in their classrooms must be able to be creative and to plan ahead. This is the only way to ensure that the learner stays focused and intrigued (Barkley, 2000).

According to Ingersoll (1998), the educator must ensure that the learner that has ADHD must never be seated by the door, as this will cause a lot of distraction and inattention. The learner should be placed near the educator's table or next to a positive role model. The view from the learner's desk should be focused on the chalkboard. The educator must ensure that the classroom is well structured and well organized. Ingersoll (1998) further states that, because learners with ADHD cannot organize themselves, the educator must take on this responsibility to ensure that the classroom is well organized and to teach the learner about organization. The learner that has ADHD is more alert and attentive in the mornings and their attention wanes over the course of the day, therefore Ingersoll (1998) suggests that the most challenging and demanding academic tasks, such as tests and assignments, should be given in the morning.

2.9.3. The learner

According to Ingersoll (1998), research has revealed that learners with ADHD have an attention bias towards novelty; therefore, their attention is easily captured by novelty and movement. They are attracted to anything new or different, but lose attention very easily in anything that is repetitious or familiar. Therefore, in order for the educator to meet the needs of a learner with ADHD for novelty, tasks should be brief, varied, and with immediate feedback for accuracy. Learners with ADHD also have a need for physical activity. They find it difficult to sit quietly and passively for long periods of time. Ingersoll (1998) adds that learners with ADHD do much better in the classroom when they are provided with frequent breaks for physical activity and when they are able to work in a position other than being seated. The educator should never keep a child that has ADHD in for detention as they need to be outside during their breaks as they need even more opportunities for movement than other children. The educator must be aware that learners with ADHD are very fidgety and should provide small objects for them to fiddle with while listening to instructions, as this is beneficial to the learner and will help them pay attention.

This is because the learner with ADHD benefits more from any kind of active participation than from passively listening or reading. Therefore, learners with ADHD should be encouraged to underline or highlight as they read, make notes in margins, turn over flash cards, or in any way interact with the material to be learned (Ingersoll, 1998).

According to Schultz (2011), group work can be helpful when working with learners with ADHD. Group work provides the opportunity for brief, goal directed social interactions that the educator is able to monitor and guide. It assists learners with ADHD who tend to respond impulsively, which derails social relationships. Schultz (2011) further states that group work increases information trading which promotes interdependence and allows an anxious child a chance to rehearse a response before presenting it to the educator. Rief (2005) claims that in order to effectively manage a classroom with learners that have ADHD, the educator must provide engaging, meaningful, high-interest learning activities. Rief (2005) further claims that educators must provide differentiated instruction and pacing to avoid frustration or boredom. Rief (2005) adds that lessons must be well planned and the class periods must have little lag time. The learners should never be unoccupied or wait to find out what they are expected to do next. The educator must ensure that the lesson is planned from the beginning to the end. The educator must also build positive relationships and rapport with the learners affected by ADHD. The educator must be understanding, flexible and patient with all learners, especially learners with ADHD.

2.9.4. The lesson

Based on some of the intervention strategies discussed above, it is crucial that educators are not only familiar with different behavioural strategies and interventions, but also with the methods of academic instruction that are appropriate for learners with ADHD. Bekle (2004) adds that educators' teaching style should involve positive academic expectations, clarity in giving directions, acceptance, patience, consistency and firmness as educators themselves can directly influence learners' progress. Bekle (2004) further states that educators' attitudes and knowledge of ADHD can influence classroom practices, which will affect the performance of learners with ADHD. Therefore, educators need to be knowledgeable about ADHD to provide effective intervention strategies to accommodate learners with ADHD in the general education classroom.

ADHD is a prevailing problem not only in all schools, but particularly in rural schools where it needs to be addressed as a matter of urgency. The literature clearly suggests that many educators lack knowledge and understanding of ADHD and that, without being educated about this disorder, educators will not be able to create a positive classroom environment for learners with ADHD.

This lack of an environment that supports learners with ADHD naturally affects their ability to learn and to develop social and other skills that they will need in the world of work. Educators thus need to gain knowledge and understanding of ADHD in order to be able to administer behavioural modifications to promote teaching and learning strategies involving learners with ADHD. This is particularly important for schools in rural contexts. Therefore, because there was a dearth of literature on ADHD in rural schools, this research was prompted by the quest to create awareness about the disorder in order to encourage educators to seek assistance from school management teams, members of staff, other members of the community and current literature to gain knowledge and understanding of ADHD.

2.10 Theoretical framework

2.10.1 What is a Theoretical Framework?

The theoretical framework is a structure that can hold or support a theory of a research study. It comprises a theory or theories that explain why the research problem exists. The problem that this research study identified was educators' lack of knowledge and understanding of ADHD. Because this problem was embedded in the educational context, the theoretical framework that underpinned my study was based on the constructivism learning theory. To illuminate how this impacted my study, I shall analyse the views of different constructivism theorists, but my focus is primarily on the work of Jean Piaget. I shall thus discuss the constructivism learning theory and highlight how it is relevant to this research study. This theoretical framework will also focus on my specific viewpoint concerning this research and how it supported me in the analyses and interpretations of the data. I shall discuss the core elements of the constructivism learning theory and thereafter show how this framework was relevant to my study by linking the constructivist theory to educators' knowledge and understanding of ADHD.

According to Swanson (2013), theories are formulated to explain, predict and understand phenomena and in many cases to challenge and extend existing knowledge. A theoretical framework is a structure that basically holds and supports a research study. Swanson (2013) further states that a theoretical framework introduces and describes the theory that explains why the research problem under study exists.

2.10.2 The Constructivist Learning Theory

The constructivist theory forms part of a set of learning theories that provide insight into how individuals learn. Learning theories describe how information is absorbed, processed and retained

during the process of learning. In order for knowledge, skills and understanding to be acquired, changed or retained, elements of cognitive, emotional, environmental and prior knowledge are influential (Swanson, 2013). Therefore, all these components work together to ensure that the process of learning occurs effectively. There are various learning theories that highlight different viewpoints on how learning takes place. However, as my study was based on educators' knowledge and understanding of ADHD, I aimed to provide insight into how educators come to learn about things; therefore the constructivism learning theory best suited my research study.

My personal experiences as an educator trainee and classroom practitioner never included exposure to formal knowledge or information on ADHD, either during my initial training or during my years of teaching. According to Fosnot (2005), to ensure that newly constructed beliefs can be actualized in practice when an educator has graduated and obtained a first job, a mentor program needs to be in place throughout the first year of teaching, with faculty visits and support for graduates. Collaborative teaching during this phase will help them to put into practice strategies stemming from their newly constructed beliefs about teaching and learning. However, this is not the case and educators need to construct their own knowledge based on experiences working with learners with ADHD in their respective classrooms.

Constructivist theorists believe that an individual's ability to learn is reliant on what he already knows and understands, "and the acquisition of knowledge is an individually tailored process of construction" (Fosnot, 2005). Hence, knowledge is constructed. Constructivism is a theory of knowledge that claims that humans generate their knowledge from interaction between their experiences and their ideas. Constructivists thus claim that individuals learn by constructing meaning that they gain through interpretative interactions with and experiences in their environment. It was in this context that this learning theory was best suited as a framework for my research study, as the constructivism theory aims to describe both what knowing is and how one comes to know.

Constructivist theorists, of which there are many, have different insights on how learning is constructed and they have different views to explain how people might acquire knowledge. Lev Vygotsky was a social constructivist who focused on the importance of social interaction to construct knowledge. Vygotsky based his theory on the fact that knowledge is co-constructed and that individuals learn from one another. His theory fixated on three major themes, namely: social interaction, the more knowledgeable other, and the zone of proximal development (David, 2014). Vygotsky believed that learning takes place within an individual's social circle. Therefore, social

interaction is vital for the construction of knowledge. The more knowledgeable other is any individual who has a better understanding or ability level than oneself, which allows one to learn from the other person. The zone of proximal development is the distance between a person's ability to complete a task with the help of others and the ability to complete the task individually (David, 2014). Vygotsky believed that this is the zone where learning takes place. Vygotsky believed that an educator should collaborate with his or her students in order to help facilitate meaning as construction by both the educator and the students. Learning therefore becomes a reciprocal experience for the students and teacher (David, 2014).

Jerome Bruner was a constructivist theorist who focused his theory on discovery learning. This is an inquiry-based, constructivist learning theory that argues that learning takes place in problem solving situations where the individual draws on his or her own past experiences and existing knowledge to discover facts and relationships and new truths to be learned (David, 2017). This theory believes that it is best for individuals to discover information and knowledge for themselves. Bruner fixated that discovery learning encourages active engagement and promotes motivation, autonomy, responsibility and independence. He argued that discovery learning develops creativity, problem-solving skills and tailors learning experiences (David, 2017).

John Dewey was a constructivist theorist who believed that individuals learn and construct their own knowledge through a hands-on approach. Dewey's constructivist learning theory fixated on pragmatism. He focused his theory on practical experiences and interaction with the environment for learning to take place. Dewey believed that this is how learning and adaptation occur. This form of constructivist learning is based on the belief that learning occurs as individuals are actively involved in the process of meaning and knowledge construction. According to Jordan (2018), Dewey was a pragmatist who believed that reality must be experienced; therefore, students must interact with their environment in order to adapt and learn. Jordan (2018) further states that Dewey felt the same idea was true for teachers and that teachers and students must learn together.

Constructivism as a paradigm looks at learning as an active, constructive process. All individuals are information constructors as people actively construct or create their own representation of reality. They are able to link prior knowledge to new information and this results in an effective learning process.

However, the constructivist theorist on whom I shall focus and who most profoundly impacted this research study is Jean Piaget and his theory of constructivism. This theory was established in 1936. Piaget focused his study on cognitive developmental stages and constructivism.

Jean Piaget examined the interaction between human experiences and their behavioural patterns and entitled these systems of knowledge 'schemata' (Wilson & Peterson, 2006). A schema refers to both mental and physical actions in knowledge and understanding. It is important to note that constructivism looks at individuals' prior knowledge, ideas and experiences to construct their own knowledge. Piaget's theory of constructivism argues that individuals produce knowledge and form meaning based on their experiences. Piaget suggested that, through processes such as accommodation and assimilation, individuals are able to construct new knowledge from their experiences (Wilson & Peterson, 2006). Piaget's theory indicates that adaptation is an important component of intellectual growth; therefore, assimilation and accommodation are complementary processes of adaptation. Assimilation is an adaptation process by which new information is taken into the previously existing schema. This is how individuals perceive and adapt to new ideas. Assimilation occurs when someone makes use of pre-existing knowledge to make sense of new knowledge. Accommodation, on the other hand, is the process by which pre-existing knowledge is altered in order to fit in the new information. A new schema might be created in this process as the individual may come to a realization that the existing knowledge had been inaccurate (Taber, 2011).

2.10.3 Relevance of the Constructivism Learning Theory to the Study

As an example of the relevance of the constructivism learning theory to my study, a disruptive child in the classroom could be cited. The child could be showing all the vital signs of ADHD; however, the educator does not possess the knowledge of the symptoms of ADHD, therefore his/her existing knowledge will reveal that the child is a disruptive, problematic learner and simply a 'naughty' child. However, when the educator has been exposed to information about ADHD and understands the symptoms of ADHD, assimilation will occur and the educator will use his/her pre-existing knowledge of the disruptive learner to make sense of the new knowledge of the symptoms of ADHD to show that the child has symptoms of ADHD and could possibly have the disorder. Accommodation then occurs, which will alter the educator's previous knowledge that the child was problematic to the realization that his/her prior knowledge was inaccurate as the child could have ADHD. This accommodation will assist both the child and the educator, as the educator can now meet with the parent and school principal to address the symptoms that the child has, and the parents in turn will be armed with new knowledge and take the initiative for a proper diagnosis of their child's disorder. Once the child has been diagnosed based on the knowledge that the educator gained, he/she can now make classroom adjustments to cater for the child with ADHD to ensure that effective teaching and learning can take place.

Based on the argument above, I used this particular learning theory as a framework for my study. As my research was based on educators' knowledge and understanding of ADHD, it was important to explore how educators construct knowledge and understanding from their experiences in the classroom, especially when dealing with learners with ADHD, as it will result in a positive learning process. Fosnot (2005) states that educators need to be involved in constructivist based learning experiences at the adult level in order to provide them with shared opportunities to analyze their own learning and thinking. I was thus motivated by this latter argument to employ the constructivist theory as a framework for my study.

Taber (2011) states, that in order for an educator to be knowledgeable, he or she must accept that good teaching requires educators to create and use, expand and reject, construct and reconstruct knowledge. Therefore, constructivism is an educational theory that comprises of ideas about how human learning occurs as well as the factors that tend to channel learning (Taber, 2011). Thus educators need to construct their own knowledge about ADHD in order to effectively teach learners with ADHD. This will occur when the educator makes sense of his or her experiences. This assumes that the educator comes to knowledge by recognizing the meaning of what is found in the environment. Therefore, in order for the educator to acquire knowledge of ADHD, he or she needs to recognize behavioural patterns that suggest the presence of learners with ADHD in the classroom. The educator will then be able to make sense of this experience and construct knowledge of ADHD.

According to Hammond, Austin, Orcutt and Rosso (2001), individuals learn by making sense of the environment and of stimuli around them, therefore the nature of the social environment shapes the way in which learning takes place. This holds true for educators' knowledge and understanding of ADHD, as the best way for the educator to gain this knowledge is in the classroom environment where learners with ADHD are present. This will give educators first-hand experience of dealing with ADHD cases allowing them the opportunity to construct knowledge of ADHD. Hammond et al. (2001) further state that constructive learning is a process of drawing connections between what is already known or understood and new information. Therefore, prior knowledge is important for the learning process as individuals make connections and draw conclusions based on a sense of what they already know and have experienced. Although some educators may have minimal knowledge of ADHD, with the experience of dealing with learners with ADHD in the classroom they are able to construct new knowledge of ADHD with regard to the symptoms and diagnosis of the disorder. By using their prior knowledge together with their experience they will construct new knowledge.

Constructivism as a paradigm or worldview indicates that learning is an active, constructive process. Educators are information constructors. They actively construct or create their own subjective representations of objective reality. All new information is linked to their prior knowledge that enables subjective mental representations. Educators gain knowledge by an active contextualized process, rather than by acquiring it. Taber (2011) states that knowledge is constructed based on personal experiences and hypotheses of the environment. Therefore, each person has a different interpretation and construction of the knowledge process, yet every educator's learning process is different as their prior knowledge of ADHD and their experiences of ADHD in the classroom will not be the same. The processes by which the educators will gain knowledge and understanding of ADHD will be different, resulting in individual constructions of knowledge.

It is important to note that just as young learners construct knowledge, so do educators. Educators tend to have a constructivist view of learning in the classroom. However, this construction of knowledge does not apply to learners but to educators as well. According to Fosnot (2005), educators need to engage in teaching experiences that confront traditional beliefs when they study children and their meaning-making, and in field experiences where they can experiment collaboratively. Only through extensive questioning, reflecting and constructing will the paradigm shift in education and educator constructivism occur, which is a key concept in the education process. Educators need to construct knowledge about various phenomena in the classroom to ensure that they are knowledgeable when dealing with a diversity of learners, especially learners that have special needs and learning disorders such as ADHD.

2.11 Conclusion

This literature review looked at what ADHD is holistically by discussing the causes, symptoms, diagnosis and treatment of the disorder. It also examined the impact that ADHD has on teaching and learning. I have deliberated on educators' knowledge and understanding of ADHD, and the strategies that could be used to accommodate learners with ADHD in the classroom. In this chapter, I have also included the theoretical framework that underpinned this research study. In the next chapter, I will discuss the research design and methodology that was used to conduct this research.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

The previous chapter presented a review of literature based on the research study, as well as the theoretical framework that underpinned the study. This chapter presents the research design and methodology that was used in the generation of data. This chapter is categorised into four sections. Firstly, it discusses the research design and approach, which includes the research paradigm, research methodology, data analysis, sampling procedures and the research instruments. The second section of this chapter focuses on the participants. There is a presentation of the biographical information and a discussion of the participants that were selected for the research study. The third section of this chapter presents the ethical considerations that were taken before conducting the research, which included consent from various stakeholders. The fourth section of this chapter provides a discussion of the credibility, trustworthiness, confirmability and dependability of the research study. Finally, a summary of the entire chapter is presented.

3.2 Research Design and Approach

Qualitative research in the human sciences is effective as it is used to gain an understanding of underlying reasons, opinions and motivations that people attach to particular phenomena. According to Pope and Mays (2000), qualitative research provides insight into a given problem and may develop ideas for a possible quantitative research on this topic in the future. Qualitative research, such as the current study, may be used to uncover trends in thought and opinions and it may look deep into the problem at hand. According to Creswell (2011), qualitative research is best suited to address a research problem in which you do not know the variables and therefore need to explore. A variety of data collection methods may be used to conduct a qualitative investigation. The data collection methods that were used to conduct this research were a questionnaire and semi-structured interviews. By using these two tools, I was able to analyse the views of various individuals, which resulted in in-depth understanding of the topic under investigation.

3.2.1. Research Paradigm

The research paradigm that I chose to work within is the interpretivist paradigm. According to Nieuwenhuis (2007), the focus of the interpretivist paradigm is to interpret peoples' subjective

experiences. It is based on how people construct the social world by sharing meaning and how they interact and relate to each other. Therefore, the interpretivist paradigm seeks to understand social member's definitions and understanding of situations. The interpretivist paradigm relates to interpreting and understanding experiences. It is used to understand human behaviour. I have chosen to work within this paradigm for my research because this study aims to gain information on educators' knowledge and understanding of ADHD which allowed clear and valid interpretations of the results.

3.2.2. Research Methodology

This research study adopted an exploratory case study as its methodological approach. According to Murray and Beglar (2009), case studies is an intensive, in-dept study of a specific context or situation. I have used this type of method, because it was best suited for my qualitative research study. Creswell (2014) further states that case studies are a design of inquiry found in many fields, especially evaluation, in which the researcher develops an in-depth analysis of a case. Therefore my research study forms a basis for exploratory case study as I aim to explore educators' knowledge and understanding of ADHD.

3.2.3. Data Analysis

The main aim of analysing data is to interpret and make sense of what was in the data (Nieuwenhuis, 2006). I critically analysed the data that was obtained from the interviews and questionnaires. With regards to the interviews, I first transcribed the audio recordings of the interviews into written text. I then read the written texts numerous times to eliminate any errors. The data was analysed using themes that were derived from my research questions. The analysis of data is presented in the next chapter.

3.2.4 Sampling procedures

The participants who were involved in this study were selected by means of the purposive sampling method. Denzin (2000) states that purposive sampling is a method that groups participants according to the preselected criteria relevant to a particular research question. Therefore, the participants that I chose to participate in the research included individuals who complied with the inclusion criteria in order to address the research objectives and the research questions. The reason that I used educators at this particular school was that they had undergone initial educator training and had been teaching at this school for a number of years. They interacted with the learners on a daily basis and would be in the best position to contribute

appropriate data to the research study. They were exposed to learners who had a diverse range of challenges and it was assumed the ADHD would be one of those challenges. This assumption was based on my personal observations as well as anecdotal evidence of the many challenges experienced by teachers at this school. The participants who eventually volunteered to participate were all appropriately qualified educators who had been exposed to a teacher training curriculum at the institutions where they had studied, therefore they were deemed to be best suited to reveal what their experiences had been with regard to learners with (or learners who were suspected of having) ADHD. I thus envisaged that I would be able to procure data from them that could be analysed to reveal their knowledge and understanding of ADHD and to determine whether they would be able to efficiently deal with such cases in their classrooms. I thus sought to understand if an examination of this group of teachers in a rural school would be able to provide insight into their ability to deal with learners with ADHD in their classrooms.

3.2.5 Research instruments

The data collection methods that were used were a questionnaire and semi-structured interviews involving eight participants. The data that were elicited were analysed and the findings are discussed in a subsequent chapter.

3.2.5.1 Questionnaire (Appendix 1)

A questionnaire, with ten questions, was used to determine the extent of the educators' knowledge and understanding of ADHD. This questionnaire examined how knowledgeable the participants were and how confident they felt about teaching learners with ADHD. The questionnaire also elicited data about the educators' ability to identify possible learners with ADHD and what procedures they followed in this process. The questionnaire required the educators to provide information on any training or education they had received pertaining to ADHD. The analyses of the data elicited by the questionnaire explored the participants' knowledge and understanding of ADHD and their ability to identify and deal with learners with ADHD in the classroom.

3.2.5.2 Semi-structured interviews (Appendix 2)

The second data collection tool that I used was an interview process. Over a period of time I conducted one-on-one interviews with the eight participants. The interview data were elicited by means of twenty questions that explored the interviewees' knowledge and understanding of ADHD. I used a recording device with the permission of the interviewees to record the discussions. The recordings were transcribed into text in English. The transcribed text was

referred back to the participants so that they could analyse the transcription to ensure that their viewpoints had been captured correctly. The recording device was used to ensure that accurate information was recorded and that the transcriptions reflected the authentic comments of the participants. The data that were collected by means of the above methodologies were then analysed thematically to generate findings for discussion. Conclusions were drawn and recommendations are offered based on these findings.

3.3. Participants

The research participants comprised of eight qualified, practicing educators teaching at a school I refer to as Riverside Secondary School. The questionnaire and interview questions were answered by all eight participants. These eight participants ranged in age from 28 to 48 years. There were five female participants and three male participants. The participants belonged to various ethnic groups. The number of years the participants had been teaching also varied. They resided in different areas, had obtained their teaching qualifications at different institutions, and taught various subjects to Grade 8 learners. However, all the participants taught at the same school and were exposed to the same group of learners on a regular basis according to the time norms established by the Department of Basic Education for the subjects they taught.

For the purpose of this study, the participants will be identified using the following pseudonyms as reflected in Table 1:

Table 1: Biographical data of the participants

Pseudonyms	Grades taught	Highest qualification	Institution	Teaching experience
Mr Mari	8-12	Bachelor of Education Degree	University of Natal	25 years
Mrs Naicker	8-10	National Professional Diploma in Education	North-West University	15 years
Ms Pillay	8-9	Bachelor of Education Degree	University of South Africa	2 years
Mr Smith	8-9	Post Graduate Certificate in Education	University of South Africa	5 years
Mr Dlamini	8-10	Bachelor of Education Degree	University of KwaZulu-Natal (Edgewood)	10 years
Mrs Watkinson	8-11	Bachelor of Education Degree	University of KwaZulu-Natal (Edgewood)	4 years

Ms Zulu	8-12	Post Graduate Certificate in Education	University of South Africa	22 years
Miss Govender	8-12	Bachelor of Education Degree	University of South Africa	18 years

Mr Mari, an Indian male, is an experienced educator had been teaching for 25 years. He had the opportunity over the years to be teaching learners ranging from Grade 8 to Grade 12. Mr Mari has a Bachelor of Education Degree from the University of Natal. Mrs Naicker, an Indian female, is also a seasoned educator, teaching for 15 years. She has been teaching learners from Grade 8 to Grade 10. Mrs Naicker has a National Professional Diploma in Education obtained from the North West University. Mrs Pillay, also an Indian female, is a fairly new educator who has only been teaching for 2 years. She has a Bachelor of Educator Degree from the University of South Africa. She has experience with teaching only Grade 8 and Grade 9 learners. Mr Smith, a White male, has been teaching for 5 years within Grade 8 and Grade 9. He has also studied at the University of South African. Mr Smith's qualification is Post Graduate Certificate in Education. Mr Dlamini, an African male, has 10 years of teaching experience. He teaches Grade 8 to Grade 10 learners and has a Bachelor of Education Degree from the University of KwaZulu-Natal. Mrs Watkinson, a White female educator has been teaching for 4 years. She also has a Bachelor of Education Degree from the University of KwaZulu-Natal. Mrs Watkinson teaches learners between Grade 8 to Grade 11. Mrs Zulu, an African female is a seasoned educator that has been teaching for 22 years with Grade 8 to Grade 12. She has a Post Graduate Certificate in Education from the University of South Africa. The last participant is Miss Govender, an Indian female, who has teaching experience within Grade 8 to Grade 12. She has a Bachelor of Education Degree from the University of South Africa.

3.4 Ethical Considerations

Adherence to ethical considerations is vital when conducting any research study. Nkwi, Nyamongo and Ryan (2001) state that all participants' informed consent is necessary for all qualitative research methods, regardless of the sampling method used. Therefore, all eight participants were given an informed consent document to sign prior to completing the questionnaire and being involved in the interviews (Appendix 3). The informed consent form indicated what was required of the participants. The document unambiguously stated that

participation was voluntary and subject to informed consent. The participants were also free to withdraw from the study at any given time. It also indicated that the rights of the participants were safeguarded in terms of the preservation of their confidentiality, access to research information and findings, and misleading promises regarding the benefits of the research. The consent form ensured that the participants were aware that their anonymity and confidentiality would be protected. “Informed consent is a mechanism for ensuring that people understand what it means to participate in a particular research study so they can decide in a conscious, deliberate way whether they want to participate” (Denzin, 2000, p. 8). The school Principal (Appendix 4), the Chairperson of the school’s Governing Body (Appendix 5), the Department of Basic Education (Appendix 6) and the research office at the University of KwaZulu-Natal (Appendix 7) also authorised the study in writing. Consent was thus obtained from all stakeholders and gatekeepers and all ethical considerations were rigidly adhered to during the entire process of the research project.

Moreover, the names of the participants and the school will not be used in this study report as I refer to them by pseudonym. The participants were assured that their personal information would not be released and this assured them that they could discuss their perceptions and views frankly and without fear of repercussions. No form of betrayal or deception was expressed throughout the study as the well-being of all the participants was fundamental.

3.5 Credibility, Trustworthiness, Confirmability and Dependability

Mouton (1996) proposes that a researcher can address sources of error and increase the trustworthiness of data by triangulation; that is, collecting and comparing data from a number of different sources to decide whether the data that have been collected from one source confirm or contradict the data collected from a different source. Therefore, I collected data using two different instruments to ensure that the data I used in my research were reliable.

This research study confirms that the findings are based on the participants’ narratives and not the opinion of the researcher. The research was not bias in any way, and correctly points out the viewpoint of the participants. I, the researcher, ensured that I transcribed the data from the interviews correctly. I referred the transcribed interviews back to the participants for their approval to ensure that I had correctly captured their perceptions and opinions from the interview process. By doing so, I was able to ascertain that there was no error in transcription. This process

also ensured that no bias influenced the transcription of the interviews and that the authentic views of the participants were used for analysis.

The participants were also issued with consent forms that highlighted the research question and purpose of the research study. They were also informed that their participation was entirely voluntary. The participants' identity was protected throughout the study. All participants were assured that privacy, anonymity and confidentiality will be of uttermost importance during this research study.

Effective and ethical qualitative research also relies on two key components, namely transferability and dependability to ensure the validity and reliability of a research study. According to Merriam (1998), external validity is concerned with the extent to which the findings of one study can be applied to other situations. Therefore, in this research report I provide sufficient information on ADHD and I present an adequate description of my research to ensure that readers have a proper understanding of the study which will enable them to compare the findings of ADHD in my research study to those of both earlier and future research projects on the same topic.

According to Shenton (2003), dependability allows a research study to be viewed as a prototype model; thus in-depth coverage of the research design allows a reader to assess the extent to which proper research practices have been followed. This enables the reader to develop a thorough understanding of the methods employed and their effectiveness. Dependability was obtained by ensuring that the processes that were used in my study were reported in great detail, thus enabling a future researcher to repeat the work and possibly gain the same results. Therefore, by adhering to a qualitative research methodology, the research study may be emulated by future researchers whose findings may confirm and even augment the findings of this study.

Moreover, the dependability of the study was ensured by recording and transcribing the authentic perceptions and views of the participants. In brief, the methodology that was used met all the necessary requirements for a qualitative research study and effective research instruments were used to ensure that the analyses were conducted within an interpretivist paradigm.

3.6 Conclusion

This chapter presented the research design and methodology. I have discussed the research design and approach, as well as the research paradigm, research methodology and data analysis. I have discussed these aspects briefly, and thereafter looked at the sampling procedures and research

instruments. I have extensively discussed my participants. I have also presented the ethical considerations as well as credibility, trustworthiness, confirmability and dependability. In the next chapter, I will present my data in the form of data analysis, data interpretation and a discussion of my research findings.

CHAPTER 4

DATA ANALYSIS, DATA INTERPRETATION AND DISCUSSION OF FINDINGS

4.1 Introduction

The previous chapter has highlighted the research design and methodology of the research study. This chapter aims to present the findings that was derived from the questionnaires and the semi-structured interviews. It is based on interpreting and analysing the data from these research instruments, as well as discussing the findings. This chapter is categorised into three sections. The first section is the presentation of data. The second section is the analysis of the data. The third section presents a discussion of findings. The presentation, analysis and discussion of findings were based on the eight themes that were derived from the study:

- Educators' knowledge and understanding of ADHD
- Identifying learners with ADHD in the classroom
- Reporting possible ADHD learners in the classroom
- Classroom management of ADHD
- The prevalence of ADHD in the classroom
- Knowledge gained by educators during their initial educator training and teaching years about ADHD
- Are educators able to provide assistance to parents with children who have ADHD?
- Educators' views on the use of ADHD medication

Finally, a summary of the entire chapter is presented.

4.2 Data Presentation

The data were generated by means of a questionnaire and semi-structured interviews. Both these instruments contained questions that focused on the ADHD phenomenon. I shall present the results based on the questionnaire and the semi-structured interview process collectively. All the names used in this report are pseudonyms to protect the identities of the participants. The data obtained from the questionnaire will be discussed according to the themes that emerged from the data. The questionnaire consisted of ten open-ended questions that elicited educators' knowledge and understanding of ADHD. The questionnaire focused on what ADHD is as well as the

symptoms, diagnosis and treatment of ADHD. It also examined how confident the educator was when dealing with learners who had ADHD. The ability of the educator to identify and support learners with ADHD was questioned. The questionnaire also aimed to gather information on the strategies that the educators used to report possible ADHD cases and to manage their classrooms to effectively cater for the needs of all learners.

On completion of the questionnaire, the participants were asked to participate in a one-on-one interview process. Twenty open-ended questions were asked and the participants were given the opportunity to provide answers to these questions. Each interview was recorded and thereafter transcribed into written text. The text was then taken back to the participants for confirmation that their views were correctly represented. The interviews focused on various aspects of ADHD and the bulk highlighted the prevalence of ADHD in the classroom and knowledge about ADHD that was gained by educators during their initial educator training as well as during their active teaching years. The interview also focused on the ability of the educators to assist parents who might require information on how to deal with a child that has ADHD. The interview also looked at educators' viewpoints on the controversial issue of the use of medication to control and treat ADHD.

4.2.1. Theme 1: Educators' knowledge and understanding of ADHD

The theme of educators' knowledge and understanding of ADHD emerged from question 1 and question 2 of the questionnaire as well as question 1, question 2, question 4 and question 13 of the interviews. It was evident from the data that were obtained that the educators' knowledge and understanding of ADHD were limited.

The educators were unable to provide an informative definition of the term ADHD. All eight merely provided the full name of ADHD when asked what the disorder was, but they could not provide any information on or clarify ADHD. They all correctly knew that ADHD is attention deficit hyperactivity disorder, but were unable to explain what this actually means. This was consistent, as every participant responded in the same manner. When the participants were asked whether they were familiar with the disorder, only four of the eight participants affirmed that they were. Mrs Watkinson stated:

"I have very brief knowledge of the disorder. I know that it causes children to misbehave in class, which causes a great deal of disruption in the classroom."

Mr Dlamini, Miss Govender and Ms Pillay shared the same viewpoint by indicating that they were not familiar with the disorder at all. Miss Govender stated:

“My knowledge is very limited with regards to being familiar with ADHD. I do know that ADHD is attention deficit hyperactivity disorder, which results in a child being hyperactive in class, but that is as far as my knowledge goes.”

The participants were asked what the symptoms of ADHD were and the participants briefly answered this question by indicating that ADHD resulted in hyperactivity. Mrs Naicker’s said:

“Learners with ADHD often can’t sit still; they may get up and run around the classroom for no reason at all.”

Mrs Watkinson responded by saying that learners were “hyperactive”. Ms Pillay added:

“ADHD results in children talking during instruction time, and they are very fidgety. It is highly disturbing and creates a major problem with discipline.”

Miss Govender and Ms Zulu corroborated this view:

“ADHD results in learners always walking around and being disruptive.”

Mr Mari responded by claiming the following:

“Learners with ADHD are unable to control themselves.”

Mr Dlamini and Mr Smith were the only participants who briefly mentioned the condition of inattentiveness. Both these participants indicated that learners with ADHD found it difficult to concentrate on the lesson. According to Mr Dlamini:

“Children with ADHD are hyperactive and they do not pay attention in class. They are always busy with something else while I am teaching. They do not listen. I think because of this condition, they find it too difficult to concentrate on the lesson.”

When the participants were asked if they felt knowledgeable about the symptoms associated with ADHD, their responses were unanimous. All the participants answered that they did not feel knowledgeable about the symptoms of ADHD. The participants claimed that they had some knowledge of ADHD, but they were not sure if this was factual information, as they had not studied this disorder. Miss Govender stated:

“I cannot differentiate between a misbehaving child and a child that is diagnosed with ADHD. This is difficult because the main symptom of ADHD is when a child is hyperactive and a child with a discipline problem also behaves in the same manner. I do not feel that I have enough information about the disorder to distinguish between the children that have it or the children that are just naughty.”

The participants were asked what they understood about the disorder and, once again, their responses demonstrated that they had limited understanding of the disorder. Ms Pillay responded by claiming that she understood that it made learners “naughty”. Mrs Watkinson, Mrs Naicker, Mr Dlamini, Miss Govender and Ms Zulu all indicated that they understood that ADHD made learners “hyperactive”. Mr Mari specified his understanding as follows:

“I understand that ADHD makes learners behave badly and not pay attention in class.”

Mr Smith claimed:

“I do not understand much about ADHD but what I do know is that learners with ADHD struggle to sit still during a class lesson.”

The participants were also asked if they thought that they had the required skills as educators to deal with learners with ADHD and, once again, all eight participants admitted that they had not.

4.2.2 Theme 2: Identifying learners with ADHD in the classroom

The theme of identifying learners with ADHD in the classroom was informed by the data that were generated by question 3 and question 4 of the questionnaire, as well as question 5, question 6, and question 7 of the interviews. The participants were asked if they felt confident enough to identify a learner who showed symptoms of ADHD in the classroom. Seven of the eight participants answered “no” to this particular question. These seven participants all indicated in some way or another that although they had limited knowledge of the symptoms of ADHD, they were not confident enough to identify learners with these symptoms as they had not been trained in this field. Mr Mari noted the following:

“In order to make a diagnosis, one should have a comprehensive understanding of the symptoms and my qualification does not include a comprehensive overview on ADHD. I do have a very limited knowledge of the disorder and know the symptoms very briefly, but that does not equip me to make a correct diagnosis, therefore I do not feel confident to identify kids with the disorder in my classroom.”

Mr Dlamini corroborated this view, stating the following:

“We, as educators, do not have the skills to identify symptoms of ADHD.”

Miss Govender made the same claim, saying:

“I cannot differentiate between a child who is misbehaving and a child that has ADHD.”

Ms Zulu added the following:

“The symptoms of ADHD is [sic] very similar to those of a child that is not disciplined, therefore it becomes difficult as an educator, who has not been trained to diagnose ADHD, to distinguish between these symptoms. Parents may take offense if an educator claims that their child has a behavioural disorder.”

Mr Smit offered the following comment:

“The symptoms of ADHD are very common in the classroom; therefore, I do not feel confident to determine which child may have the disorder. I would need to be trained in this aspect, in order to be able to identify these symptoms [as ADHD].”

Ms Pillay and Mrs Naicker both agreed that identifying the symptoms of ADHD in the classroom was a “very difficult task”.

Mrs Watkinson, the only participant who indicated that she was confident in identifying learners who showed symptoms of ADHD, admitted that there was a fine line between purely naughty learners and those who had this disorder:

“I am able to identify the learners that can pay attention and those that can't; however, I do have some difficulty differentiating between a naughty learner and a learner with ADHD”

The participants were also asked if they had identified any learners with ADHD in their classrooms. Mrs Pillay and Mr Dlamini were the only participants who had not made such an identification. The other participants claimed that it was difficult to be certain but they suspected that there were learners with ADHD in their classrooms based on the behavioural patterns that some children displayed. When the participants were asked to differentiate between a child with ADHD and a child without the disorder, they answered that a child with ADHD was hyperactive and a child without ADHD was more likely to pay attention in class. Mr Smith stated:

“I think that the child without the disorder typically produces better results. This is because the child without ADHD pays attention in class and learns better.”

4.2.3 Theme 3: Reporting possible learners with ADHD in the classroom

This particular theme was informed by the data that were elicited by question 5 of the questionnaire and question 8 of the interviews. The participants were asked what they thought they should do if they identified learners with ADHD in the classroom as well as what steps they took to ensure that a learner was correctly diagnosed and that appropriate treatment was prescribed. Mrs Naicker stated:

“I identified learners with ADHD in my classroom and discussed it with other educators, but I did not take it any further than that. I am unsure of the steps forward, as I am not certain that it is my duty to make this judgement about the child.”

Ms Pillay claimed that she had also identified learners with ADHD and that she knew that she *“should contact the parents but [she did] not do that.”*

Mrs Watkinson stated:

“I suspect that there are learners with ADHD in my classroom and I think that I should contact the parents but have not done it yet. I have made the school management team aware of the problem and suggested that the learners seek medical treatment.”

Mr Smith had also identified learners with ADHD in his classroom and contacted the school psychologist to provide assistance. Mr Mari also indicated that he had identified learners with ADHD and contacted the parents to discuss the learners' behavioural problems. Ms Zulu, Mr Dlamini and Miss Govender indicated that they had taken no steps to identify, diagnose and report learners with ADHD to the necessary school stakeholders or to the parents.

4.2.4 Theme 4: Classroom management of ADHD in the classroom

The theme of managing learners with ADHD in the classroom was informed by responses to question 6 and question 10 of the questionnaire as well as question 10 and question 11 of the interviews. The participants were asked to mention what strategies they had undertaken to accommodate learners that they suspected of having ADHD and learners who did not have these symptoms in the same classroom to ensure that effective teaching and learning occurred. Mr Mari indicated the following:

“Learners who are disruptive are usually isolated or removed from the class so that teaching and learning can go on with the rest of the learners. I try not to entertain misbehaviour in my classroom.”

Mr Dlamini also indicated that he would separate a learner with behavioural problems/ADHD from the rest of the learners by *“putting them in the front of the class”*. Mrs Naicker shared the same viewpoint and also stated that she would *“separate the learner with [suspected] ADHD as he/she is very disruptive.”*

Ms Pillay commented as follows:

“I would isolate the learner with ADHD from the rest of the class. I would think that the child should be kept right in the front where he or she can be monitored by me all the time and would not be a disturbance to the other children in the classroom.”

Miss Govender and Ms Zulu indicated that they would *“separate the learners with ADHD from the rest of the class so that they would not disturb the other learners”*. The only participants who shared a different viewpoint were Mr Smith and Mrs Watkinson. Mr Smith stated:

“I would use group work to his advantage by placing learners that have ADHD in a group with learners that don't have ADHD or with gifted learners so that they can model the accepted behaviour.”

Mrs Watkinson stated that she used *“a variety of learner centred strategies to accommodate all learners such as practical activities”*.

In light of the principles of inclusive education, the participants were asked what they could do to assist learners with ADHD in the classroom. Mr Mari indicated that *“lessons need to be interesting and well planned in order to cater for learners with ADHD”*. Mr Smith stated that *“one-on-one learning as well as group learning”* should be conducted. Mrs Watkinson stated that educators should *“simplify lessons”* so that learners could understand. Mrs Naicker suggested the use of appropriate resources. Ms Pillay stated that she would *“isolate the learners”* and seek parental supervision. Mr Dlamini indicated that he would be unable to assist learners with ADHD as he stated:

“Due to mainstream education, we do not have the time to give learners the type of attention that they do need. For example, yes, we can say that we will assist learners with ADHD with individual attention, but that is not the reality of the schooling system. We have so many other learners to see to with the large class sizes, and we have a lot of demands from the Department of Education, such as admin work. This makes it very difficult to give learners with special needs any kind of special attention in the public school sector, and sadly, that is the reality of the education system.”

Ms Zulu indicated that lessons should be planned in a simple and fun way, while Miss Govender stated that learners should be given *“the opportunity to learn at their own pace”*.

The participants were asked what strategies they administered in their classrooms to include learners with ADHD and what intervention programs they created to accommodate learners with ADHD. Mr Mari indicated that he had *“no idea”* and that his intervention strategy might be that *“learners with ADHD are taught separately.”* Mrs Watkinson and Mr Smith used learner centred education and *“collaborate learning”*. Mrs Naicker indicated that *“separating the learners”* worked best and that she could possibly have *“additional classes”*, but confessed that there was not always time. Mr Dlamini shared the same sentiments by stating that *“Learners with ADHD must be separated and that special attention must be given to them”*. Miss Govender indicated that *“tasks are broken up into workable and obtainable steps”*, whereas Ms Zulu stated that learners were supported and *“group work”* was encouraged. Ms Pillay admitted that she was *“not sure”* and did not answer these questions.

4.2.5 Theme 5: The prevalence of ADHD in the classroom

This theme was informed by the responses to question 9 of the questionnaire as well as question 3 and question 17 of the interviews. The participants were asked if they thought that ADHD was a serious learning disability in schools and they were required to indicate how common they thought the disorder was. They were also asked to opine whether ADHD was a serious problem in their school and the surrounding area. Overall, the responses were unanimous as all the participants indicated that ADHD was a very common and serious condition. Mr Mari stated:

“ADHD a serious problem that can lead to a learner suffering in the future because they are not correctly diagnosed.”

Mr Smith commented as follows:

“ADHD is very common amongst youngsters who have a very sugary diet.”

Mr Dlamini stated:

“I am not sure exactly how common the disorder is but would suspect that it affects more children than we are led to believe. ADHD is a very serious problem because we as educators do not have the knowledge to deal with it.”

4.2.6 Theme 6: Knowledge gained by educators during their initial educator training and teaching years about ADHD

This theme was enlightened by the data pertaining to question 7 and question 8 of the questionnaire as well as question 14 and question 19 of the interviews. The participants were asked if they had been trained to deal with learners with ADHD during their initial educator training program, by the school, or the Department of Basic Education in the form of curriculum content, workshops or seminars. They were also asked if they thought that they received sufficient support from the school management team, Department of Basic Education, and the parent community to formulate intervention programs for learners with ADHD. The questions probed whether they as educators had been trained and given the necessary skills to deal with ADHD in the classroom. All the participants answered “no” to all four these questions.

4.2.7 Theme 7: Are educators able to provide assistance to parents with children who have ADHD?

This theme was informed by that data that were obtained with reference to question 9, question 12, question 15 and question 16 of the interview. The participants were asked if they felt comfortable speaking to parents about getting their child evaluated for ADHD. All the participants answered “no” to this question. Mrs Naicker indicated the following:

“I feel uncomfortable speaking to parents about such a topic as the parents may not understand and I may not be able to answer all their questions. Parents may also be in denial to accept that their child may have ADHD. This will result in the parent taking offense to my assumption.”

The participants were also asked what they could do to ensure that parents had the necessary support to deal with their child should he/she be diagnosed with ADHD. The participants indicated that they were willing to assist parents but they didn’t have all the necessary information about the disorder. Mrs Watkinson stated:

“I could educate the parents about the disorder; however, I do not have all the information about the disorder. If I were more knowledgeable about ADHD, I would be more than happy to assist the parents, as this will benefit the learners.”

Mr Mari stated:

“I would contact the parents from time to time.”

The participants were also asked if they thought that parents were knowledgeable about the disorder, and their responses were a unanimous “no”. The participants were asked if they would be willing to organise a workshop to educate parents about the disorder. Only Mr Mari and Mr Smith answered that they would; however, they did indicate that they could only do so if they had the relevant knowledge. All the other participants stated that they could not host a workshop to educate parents on ADHD. Mr Dlamini added that teachers *“have not been trained, hence we cannot workshop others”*, whereas Mrs Naicker stated:

“I do not have sufficient knowledge on ADHD, and believe that parents may take offence to the workshop, as they would not want to hear that their child is suspected of having ADHD.”

4.2.8. Theme 8: Educators’ views on the use of ADHD medication

Data obtained from question 18 of the interviews informed this theme. The participants were asked if they thought that medication was an effective treatment method for ADHD, or if they believed that the disorder could be maintained without treatment. Mr Dlamini was the only participant who stated that he believed that *“the disorder can be maintained without treatment”*. The remaining seven participants indicated that the use of ADHD medication was an effective treatment method to maintain the disorder. Mr Smith believed that medication *“could certainly help, but it isn’t always necessary.”*

4.2.9 Benefit of this research study

To conclude the research questions, each participant was asked whether this research study had been beneficial to him/her and whether the questions on ADHD had evoked some response in them as educators to find out more about the disorder. All the participants stated that they would do so. Mr Smith added:

“I now feel that I need to find out more about ADHD and the treatment, as well as ways to handle this disorder in the classroom.”

Mrs Naicker stated that she had been *“enlightened about ADHD”* and that she was *“curious to do research and find out more about it”*.

4.3 Data analysis

By analysing the data that I had obtained I aimed to examine and evaluate the data by breaking it into thematic components and discussing each component separately. By breaking the information into smaller parts for this report, I was able to elucidate clear and comprehensive understanding of the findings. I analysed the data according to the themes that I used previously to present the data. After the analysis of the data, I then provided a discussion of the findings by linking the findings to relevant findings in the literature, and from my theoretical framework. The

research instruments that were used were very effective in gathering data that were relevant to the objectives and research questions of this study. The questionnaire was administered to obtain data pertaining to the knowledge and understanding of the participants. The data were also used to determine the participants' understanding of an educator's role in identifying and dealing with learners with ADHD in the classroom. It could also be determined how knowledgeable and confident the educators were with regards to reporting ADHD cases and how they managed their classrooms to cater for the needs of learners with ADHD.

Conducting the interviews was a process that generated very informative information as I was able to obtain data from different participants and I was able to hear their different viewpoints. I read the questions to the participants and recorded their responses for analysis. I also gave the participants a copy of the questions so that they could view the questions if required. The interview was conducted on different days according to the availability of the participants. Each interview was recorded and thereafter transcribed to written text. The themes that emerged focus on the prevalence of ADHD in the classroom, the knowledge that educators had gained during their years of training and teaching, as well as the ability that the educators had to provide assistance to parents with children who had ADHD. The interview also elicited the participants' viewpoints on the use of ADHD medication.

4.3.1. Educators' knowledge and understanding of ADHD

It was found that the educators' knowledge of ADHD was limited and that their understanding of this disorder was vague. The data pertaining to this theme clearly indicated that educators did not possess the necessary knowledge and understanding to deal effectively with the learners in their classrooms who might have been affected by ADHD. This was evident as all the participants struggled to provide a comprehensive definition of ADHD. The educators' responses revealed that they had mere 'snapshot' knowledge of ADHD and they also admitted that they were not familiar with the disorder. Moreover, most felt ill equipped to definitively identify the symptoms of ADHD and to refer the child for proper diagnosis. This was apparent as all the participants stated that they were not knowledgeable of this disorder. Many understood that ADHD results in hyperactivity that may be identified as 'naughty' behaviour, but none was confident to distinguish between a 'naughty' child and a child suffering from ADHD. They did not have a comprehensive, holistic understanding of the disorder and the various components associated with the symptoms

of ADHD. The participants admitted that they had insufficient skills to identify and deal with learners with ADHD in the classroom.

This finding exposes a serious problem, as educators are key stakeholders in the diagnosis process of learners with ADHD. If educators don't have the necessary knowledge and understanding of the disorder, they will not understand the difference between a troublesome learner and a learner with ADHD; thus, they will not be able to deal with the problem effectively and this will hinder the teaching and learning process. It was evident that their lack of knowledge resulted in misdiagnosis – in fact, a lack of diagnosis – and it may be argued that this oversight might affect the children with ADHD in their care at a later stage as proper treatment had neither been sought nor administered. According to Perold, Louw and Kleynhans (2010), the teacher is most often the first person to make a referral for assessment for ADHD and play an important role in the assessment process. Therefore, it is crucial for educators, to have the correct knowledge and information of ADHD to make the correct diagnosis.

4.3.2 Identifying learners with ADHD in the classroom

The data undeniably revealed that the participants lacked the skills to identify learners with ADHD and to refer them for diagnosis and treatment. They were not confident in identifying the symptoms of ADHD as they felt that they were not skilled as they had not been trained to do so. As was the case in the theme above, the only participant who felt confident indicated that the criterion that was used was to observe the learners who paid attention compared to those who did not pay attention. However, using this as a single criterion to suspect ADHD is problematic as many factors result in inattention, and it does not mean that all learners who do not pay attention have ADHD. One revealing oversight was that the participants did not mention anything about a continuous pattern of behaviour. The participants did state that they had problems differentiating between a 'naughty' learner and a learner that had the disorder, but the majority had some notion of what to look for to identify possible ADHD cases in their classrooms. However, they were not confident enough to take further steps as they were not knowledgeable about factual information regarding ADHD. One participant even stated that he perused academic performance to determine whether a child had ADHD or not, because learners who achieved better results could not be suspected of having ADHD. However, this was a fallacy as academic performance is not a criterion for the diagnosis of ADHD. With effective management, some learners who have ADHD can produce excellent academic results. To believe that academic retardation is associated with

ADHD is a misconception that can result in a serious dispute between the educator and the parent, as there are numerous contributing factors to poor academic results and ADHD is not exclusively responsible for this phenomenon. For example, the child could be a slow learner, have other learning difficulties, poor eyesight, or problems at home that could result in poor performance. Therefore, educators need to acquire the necessary knowledge, skills and insight that will equip them to effectively identify learners with ADHD in their classrooms.

4.3.3 Reporting suspected cases of ADHD

The majority of the participants admitted that they had taken no steps to identify and report learners with ADHD to the necessary school stakeholders or to the parents. This state of affairs is a serious concern as many of the participants indicated that they suspected the prevalence of ADHD cases in their classrooms but they had not taken any further steps. One participant even stated that she had discussed this case with other educators but that was the only step that had been taken and it resulted in nothing. This is quite alarming because the effective education of the learner was at stake. Parents are generally not knowledgeable about the disorder and are often in denial if some symptoms manifest in their child, and therefore educators must make them aware of the possibility of ADHD so that they can seek the necessary assistance to help their child. Some participants admitted that they were aware that they needed to contact the parents, but had not done so as yet. This is a matter of concern, as it seems that the educators were not aware of the seriousness of ADHD. Only one participant stated that he had discussed the matter with the parent and two participants had contacted the school psychologist. These educators needed to be more responsible in this matter by following up to ensure that the learners were adequately supported in the diagnosis process. This finding clearly reveals that educators need to be informed of the reporting procedure of suspected ADHD cases so that all learners are assisted appropriately.

4.3.4 Management of learners with ADHD in the classroom

One of the objectives of the study was to determine which classroom management strategies could best be employed to assist learners with ADHD in the classroom. However, the data that were elicited in this regard were quite alarming. Most of the participants indicated that they separated and isolated learners who manifested ADHD associated symptoms from the rest of the class so that they could teach the rest of the class effectively. This contravened the principles of inclusive

education. A learner with a learning or behavioural disorder should not be isolated but included in the teaching and learning process. Separating a learner revealed a lack of classroom management skills among the educators; however, it must be borne in mind that they had never been equipped with the necessary knowledge and skills to support and manage learners with ADHD in their classrooms along with other learners. When asked what they should be doing, the participants had some interesting views such as group work, learner centred education, and practical or interactive activities, but when asked what they were doing to include learners with ADHD, many of them did not know how to respond to the question. One participant frankly replied that she did not know. The problem was clearly revealed that educators are not trained or equipped to accommodate the diversity of the learners in their classrooms. Separating 'naughty' learners from more conventionally behaved learners seemed to be the norm when they were faced with challenges, but this should not happen in classrooms where the education of all learners is at stake.

4.3.5 The prevalence of ADHD in the classrooms of the educators under study

It was evident that all the participants were unaware of the seriousness of ADHD as they agreed that it was a very common that behavioural disorder manifested in 'naughtiness' and inattention. Although one participant stated that he did not know exactly how common the disorder was, he opined that it affected more children than they as educators were led to believe. This participant was also adamant that it was a serious problem because educators did not have the knowledge to deal with the issue. It was also noted that many participants stated that they had identified learners in their class that might have had ADHD, which suggests that the condition may be more prevalent than generally assumed. One participant stated that ADHD was very common amongst youngsters that have a sugary diet. This is a major misconception that people have, as ADHD is a behavioural disorder that affects the brain. It is caused by many factors such as genetics or traumatic experiences, to name a few. It is generally assumed that it is not caused by the diet of a child as a child will not become ADHD susceptible if he or she consumes a lot of sugar. It is not an attainable disorder, but it has been argued that it may be managed with, among other methods, an appropriate diet. For example, an online article (Seven [7] Foods to avoid if your child has ADHD, n.d.) states:

“Much research has been done on the subject of a helpful diet for ADHD, but according to the Mayo Clinic, experts don't believe that foods actually cause ADHD. ... However, early studies have not consistently concluded that supplementation of omega-3 fatty acids in the diets of children with ADHD will improve behaviour.”

However, some children with ADHD have responded well to such diets.

4.3.6 Do educators gain knowledge about ADHD during initial training and as teachers?

It was evident from the data that the participating educators had not gained any knowledge of ADHD during their initial educator training or during their years of teaching. The participants had attended various universities and had obtained different qualifications; however, they all stated that they had not been trained to understand the disorder or to deal with learners with ADHD in the classroom. ADHD is a serious yet common behavioural disorder, but educator training programmes don't include ADHD in their curricula. I was also not trained at university during my undergraduate programme to deal with ADHD. The only time I was exposed to this topic was during my postgraduate Honours degree when I was studying within the field of educational psychology. This concerns me as many educators don't further their education beyond their first degree, and therefore they may never learn about ADHD. All educators, at some point in their teaching careers, will face the challenge of learners with ADHD in their classrooms, and therefore they need to be trained to deal with these challenges. Moreover, the study revealed that the educators had not received in-service training or attended workshops on ADHD that had been organised by school management teams or the Department of Basic Education. They were only compelled to face the issue head-on when they agreed to participate in this study. Educators need to create awareness of ADHD and promote the need for ADHD seminars to assist them.

4.3.7 Are educators able to provide assistance to parents with children who have ADHD?

The participants were unanimous that parents are not knowledgeable about ADHD. For this reason, it has become paramount that parents are informed about the disorder. The participants admitted that they were not comfortable speaking to parents about ADHD, especially if the educator suspected that the child showed symptoms of this disorder. The educators felt that they did not have sufficient knowledge about the disorder, and therefore they might not be able to answer the questions that parents might pose. They were also afraid that parents might be in denial

and be offended if the suggestion of a behavioural disorder was made and the parents might feel that the educator was victimising their child. For this reason, these educators dealt with behavioural problems as best they could. The educators declared their willingness to provide assistance to parents, but they felt that they did not have the necessary knowledge and skills to help. For example, when the participants were asked if they would workshop parents on ADHD, only two participants stated that they would as they believed they had, or could acquire, the necessary information. The rest of the participants claimed that they had not been trained to workshop parents as they had not been exposed to workshops or training themselves. Therefore, it is crucial that educators receive the necessary assistance so that they can, in turn, assist the parent community. According to Lawrence (2012), joint intervention involves many stakeholders who are all necessary for the successful advancement of the child who has ADHD. This involves medical, educational and behavioural interventions. Therefore, it is important for the parent and educator to work together.

4.3.8 Educators' views on the use of ADHD medication

The use of ADHD medication is certainly an on-going debate and there are valid arguments to support each viewpoint. Therefore, it did not surprise me that the participants had conflicting viewpoints on the use of ADHD medication. Although some participants stated that such medication was necessary to manage the disorder, there were others who felt that ADHD could be treated without the use of medication. They argued that it is the prerogative of the parents to make an informed decision as to what is best for their child. Educators can share their views and suggestions with parents but they should not force their opinions onto the parents as there are pros and cons for the use of ADHD medication. Therefore, parents should be guided, by the educator, to seek professional help to get their child correctly diagnosed and treated for ADHD.

4.3.9 Beneficial impact of this research study

The nature of the questioning that was employed in this study was undoubtedly beneficial to all the participants as they admitted their enhanced interest in the topic of ADHD at the close of the interview process. Initially all the participants were eager to participate in the research study although some educators declined when they were approached. The participants admitted that they had not realised how important it was to be knowledgeable of ADHD as classroom teachers.

They were enthusiastic at the close of the research process and were keen to gain additional information on this disorder. They showed a lively interest in learning more; therefore I hope, once the findings have been appropriately disseminated, that this research will create awareness among a large body of educators and that it will encourage them to find out more about ADHD so that they may put their knowledge to use in the interest of their learners who are afflicted with this disorder.

4.4 Discussion of the Findings

Based on the data analysis, it was deduced that the participating educators did not have the necessary knowledge and understanding to effectively teach learners with ADHD in the classroom. The findings suggest that the knowledge that these educators had about ADHD was limited. This is supported by Brook, Watemberg & Geva (2000), as they claim that based on a study that they conducted, the general knowledge about ADHD is relatively low amongst educators. Referring to the constructivist learning theory on how information is absorbed, processed and retained, it becomes transparent that educators had to develop their own knowledge about ADHD, and how to deal with it in the classroom. Based on the findings that emerged from the administration of the two research tools, these educators had not received any information about ADHD during their initial educator training, and they had not been exposed to any coursework that assisted them to identify learners with ADHD in their classrooms. According to the Constructivist learning theory, an individual's ability to learn is reliant on what he already knows and understands, "and the acquisition of knowledge is an individually tailored process of construction" (Fosnot, 2005). This means that knowledge is constructed. Educators are in close contact with learners on a daily basis during the school weeks throughout the year. This means that educators are in the front line of those who face the challenges associated with ADHD in the education sphere, and they should therefore be best equipped to identify learners who are possibly afflicted with ADHD. The theory that underpins this research study claims that humans generate their knowledge from interaction between their experiences and their ideas. Constructivists claim that individuals learn by constructing meaning that they gain through interpretative interactions with and experiences in their environment. It is therefore crucial that educators have the necessary knowledge and skills to identify learners who manifest symptoms of ADHD and to have an understanding of how to manage and assist the learners who have this disorder. The findings of

this research study illustrate that the educators had not been trained to assist learners with ADHD appropriately. This is a problem that needs urgent attention.

The findings from the data also revealed that the educators did not understand the Mandatory Reporting Policy and Procedures. This report contains basic knowledge that all educators should be taught during their initial educator training or during their teaching years. These educators needed to be trained so that they could inform and support the parent community of the school adequately. ADHD is a common behavioural disorder that affects many children; therefore, educators need to gain knowledge and understanding to assist the learners to reach their optimal potential.

4.5. Conclusion

This chapter on data analysis, data interpretation and discussion of findings presented the data that was obtained from the questionnaires and interviews. The data was presented in the form of various themes. These themes were then analysed and discussed. The findings of the research study were presented and thereafter discussed. I found that educators had limited knowledge of ADHD because the participants claimed that “I have very brief knowledge of the disorder” (Mrs Watkinson) and “my knowledge is very limited with regards to being familiar with ADHD” (Miss Govender). Some educators are unable to differentiate between ADHD and a misbehaving child without ADHD, as indicated by the participants, “I cannot differentiate between a misbehaving child and a child that is diagnosed with ADHD” (Miss Govender) and “I do have some difficulty differentiating between a naughty learner and a learner with ADHD” (Mrs Watkinson). Therefore, the findings suggest that educators do not have sufficient knowledge of ADHD. In the next chapter, I will provide recommendations and a concluding discussion for the study.

CHAPTER 5

CONCLUDING REMARKS AND RECOMMENDATIONS

5.1 Introduction

The intention of this research study was to explore educators' knowledge and understanding of ADHD, to examine the methods that educators used to accommodate learners with ADHD and to determine the effective strategies that educators employ in teaching learners with ADHD. The previous chapter presented the data that was obtained from the research study. It then analysed the data based on themes that emerged from the questionnaires and the semi-structured interviews that was conducted. A discussion of the research findings was then presented. This chapter firstly presents a summary of the research findings in relation to my research questions, and thereafter presents recommendations, which include a discussion on initial teacher training programmes, workshops, intervention programmes, awareness programmes and further research. Lastly, concluding remarks have been presented.

5.2 Summary of the research findings

Many educators experience difficulty in identifying and effectively teaching learners with ADHD. Research has shown that many learners are affected by ADHD and, because educators spend the majority of the day with these young learners, they should be the first to notice a child who manifests symptoms associated with ADHD. Learners with ADHD may be more easily identified in the confined space of a classroom where structured rules govern behaviour that these learners are unable to adhere to. Therefore, it is crucial that all educators are appropriately trained during their initial educator training programme as well as during their years of teaching to understand and assist learners with ADHD. Programmes need to be initiated to provide educators with the knowledge, understanding and skills to deal with learners with ADHD from a young age in order to regulate their behaviour in the confined context of the classroom. It was against this background that this study was undertaken in the quest to determine the knowledge and understanding that educators had regarding ADHD. This research established that the educators under study had limited knowledge of ADHD and that they were not equipped with the necessary

skills, due to a lack of training, to assist their learners who might have manifested symptoms of ADHD in their classrooms.

5.2.1. Research Question 1: What knowledge do educators have about attention deficit hyperactivity disorder (ADHD)?

The research study was conducted to explore what knowledge educators have about ADHD, it was established from this research that educators have very limited knowledge with regards to ADHD. As presented in chapter four, the educators that participated in the study indicated that they have limited knowledge on the disorder. The educators claimed that they do not know much about the disorder. The educators were able to clearly state that ADHD involved attention deficit and hyperactivity, but were unable to distinguish between the symptoms of hyperactivity in the classroom by a learner with ADHD and a misbehaving child. The educators claimed that they do not have sufficient knowledge about ADHD, as they were not trained to diagnose or treat learners with the disorder. The educators struggled to provide a comprehensive understanding of the symptoms and indicated that they have a very brief understanding of the symptoms of ADHD. According to Lawrence (2012), for effective classroom management, it is important that educators have a good understanding of ADHD. Therefore, the limited knowledge that the educators had within this research study was alarming, and proves that there must be intervention that must take place to improve educator's knowledge and understanding of ADHD. The theoretical framework that underpinned this research study was Piaget's constructivist learning theory. According to Swanson (2013), learning theories describe how information is absorbed, processed and retained during the learning process; therefore, for knowledge, skills and understanding to be acquired, changed or retained, elements of cognitive, emotional, environmental and prior knowledge are influential. Therefore, it was established from this research study that educators had to construct their knowledge from their own experiences within their classroom environment and their prior knowledge that they have obtained over the years with regards to ADHD. All eight educator participants in this research study claimed that they were not trained to deal with ADHD during their initial teacher training years, nor during their years as an educator; and had to learn about ADHD from their experiences in the classroom. They used the knowledge and understanding that they constructed and developed to deal with learners with ADHD.

5.2.2. Research Question 2: What strategies do educators use to accommodate learners with attention deficit hyperactivity disorder (ADHD)?

The strategies that educators use to accommodate learners with ADHD in the classroom is an important aspect in the process of teaching and learning. According to Lawrence (2012), most educators do not know how to teach learners who have ADHD and lack a basic understanding of the nature of the disorder as well as the necessary skills in classroom management. The classroom management of ADHD was a significant theme within this research study. This theme was highlighted in chapter four. One of the strategies that educators used to accommodate learners with ADHD is to isolate them from the rest of the learners. The learner that they suspect has ADHD is usually placed away from the other learners so that they are unable to distract the rest of the class. Many of the educators claimed to use this strategy. This is clearly not the best strategy, but the educators claim that in the public-school sector, there are many barriers like time constraints and large class size, that prevent them from using other effective strategies. Another strategy that educators use that may be more effective, is placing the learner with ADHD in the front of the class, closer to the educator. This allows the learner with ADHD to be monitored by the educator more frequently and ensure that they are less distracted. The educators also claim that they use group work to their advantage by placing the learner with ADHD in a group with gifted learners so that they can model acceptable behaviour. One of the educators did claim that he tries to use inclusive education methods by making his lessons more interesting and well planned, with the use of appropriate teaching resources. The use of one-on-one learning is sometimes used to ensure that the child with ADHD has clear and simple instructions. ADHD learners are also given the opportunity to work at their own pace. The educators claim that they sometimes try to teach the ADHD learners separately, and other times, use collaborate learning and learner centred teaching methodologies. Additional classes are sometimes administered and special attention is given to ADHD learners when the time permits them. One of the educators claimed that she tries to have tasks broken up into workable and obtainable steps.

5.2.3. Research Question 3: Which strategies are most effective that educators employ in teaching learners with ADHD?

From the findings, the strategies that was used by the educators for teaching learners with ADHD were not all effective, however, there were some strategies that are most effective for learners with ADHD. According to Lawrence (2012), the learner with ADHD needs to be seated in the

front of the class at all times. They should be seated between peaceful classmates to yield good results. Lawrence (2012), further claims that learners with ADHD should be seated away from noisy areas with the least amount of distractions. The educators did indicate that they place the learner with ADHD in the front of the class, therefore this is an effective strategy, and they try to place learners in groups with gifted learners. The use of learner centred teaching is also an effective strategy that was used some of the educators. By breaking up tasks, into obtainable steps ensures that the learner with ADHD is able to complete his tasks effectively. It was also established that some educators try to give clear and simple instructions to learners with ADHD, and this helps to ensure that they understand the given tasks.

5.3 Recommendations

In order to ensure that effective progress is made with regard to educating educators to effectively deal with ADHD in the classroom, it is vital for changes to be made in various fields. Collaboration among the Department of Education, universities, schools, educators, parents and the community will certainly bring about change and improve the life experiences of the many young children who are afflicted with ADHD. All children have the ability to progress academically and holistically if the educator has the tools to efficiently drive the process. Therefore it is vital to improve the quality of education of all learners regardless of the learning disorder that may impact their academic and/or personal development and social adjustment.

5.3.1 Incorporating ADHD courses in initial educator training programmes

This study, as well as my personal experience, highlighted the fact that undergraduate or diploma programmes that are offered at tertiary institutions do not offer ADHD courses. This omission is detrimental to the education of many learners, yet it has never been addressed. It is therefore vital that courses on ADHD be incorporated in curricula and educator training programmes so that all educators who qualify with a degree or diploma in education will be adequately equipped to identify and assist learners with ADHD in their classrooms.

5.3.2 Workshops, seminars and training programmes for current educators

The Department of Basic Education, and unions, should take the initiative to conduct workshops on teaching learners with ADHD in the classroom. All practicing educators should then be allowed to attend these workshops, seminars and training programmes so that they are equipped with the knowledge to identify and assist learners with ADHD. Experts in the field of ADHD should be invited to run these workshops to train educators to identify and assist learners with ADHD.

5.3.3 Intervention programmes

School management teams should organise intervention programmes to ensure effective communication among the school principal, educators, parents and relevant community structures to address the issues associated with ADHD. These intervention programmes should aim to facilitate collaboration among the different systems that influence the child. Such programmes should also make individuals aware of the importance of supporting children who are affected by ADHD.

5.3.4 Awareness programmes

The Department of Basic Education, universities and schools should collaborate to create awareness programmes to highlight the extent of the ADHD problem. This will not only inform the community and parents about the seriousness of the problem, but also educate teachers on how to deal with ADHD. Parents have a tendency to take offense when an educator suggests that their child may have ADHD; therefore, if there is awareness of the disorder, then parents will realise that ADHD is common and can be treated effectively. This will also enhance communication between parents and educators and together they can devise ways to help these learners.

5.3.5 Further research

The literature review that informed this study revealed that insufficient research had been conducted on educators' knowledge and understanding of ADHD, particularly in rural settings.

It is therefore recommended that extensive research be done using a larger sample size to investigate this topic in further depth. If the findings are appropriately disseminated – as was the intention with the findings of this study – awareness will be created that will in turn result in enrichment programmes that will equip educators with the necessary knowledge and skills to assist children who have ADHD.

5.4 Concluding Remarks

This research study found that ADHD is a serious phenomenon that affects children and even adults globally. It was also established that many learners with ADHD are not identified and that the symptoms associated with ADHD remain untreated. This is predominantly caused by a lack of knowledge of ADHD among educators and parents. If the educator is knowledgeable about the disorder, he or she will be able to assist parents to refer the child so that an appropriate diagnosis can be made that will result in effective treatment. However, this can only occur if the educator is well informed and educated about the disorder. It is undoubtedly the role of the educator to identify learners who manifest symptoms of ADHD in the classroom. This can only occur if the educator has gained the necessary knowledge and skills to identify and deal with ADHD; this means that the educator needs the knowledge to distinguish between ‘naughty’ learners and those who appear naughty and disruptive but who are actually afflicted with ADHD. However, this research revealed that educators are not adequately trained either in their initial educator training programmes nor in their years of teaching to identify and assist children who have ADHD. Tertiary teacher training institutions should therefore take cognisance of this omission and amend their teacher training curricula to equip trainee educators with the knowledge and skills to deal with learners who have ADHD. It is vital to note that educators have virtually daily contact with learners and they thus need to be well informed about and be involved in the process of identifying learners with ADHD.

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APPENDIX 1

QUESTIONNAIRE

Research title: Educators' knowledge and understanding of Attention Deficit Hyperactivity Disorder (ADHD) - A case study of a semi-rural school in KwaZulu-Natal.

Name: _____

Pseudonym: _____

Qualification: _____

Number of years teaching: _____

1. What is ADHD?

2. What are the symptoms of ADHD?

3. Do you feel confident in identifying symptoms of ADHD in the classroom? Why?

4. Have you identified any learners that you teach that possess symptoms of ADHD?

5. If you answered yes to the above question, what steps have you taken to ensure that correct diagnosis and treatment have been established?

6. What are some of the strategies that you undertake to accommodate learners who have ADHD and learners that don't in the same classroom to ensure effective teaching and learning holistically?

7. Have you ever been trained to deal with learners with ADHD during your initial educator training program?

8. Have you been trained by your school or the department of basic education in the form of workshops or seminars with the necessary skills to identify symptoms of ADHD or to deal with ADHD learners in the classroom?

9. Do you think that ADHD is a serious learning disability in schools? Why/ why not?

10. In terms of inclusive education, what do you think that you as an educator can do to assist learners with ADHD in the classroom?

Thank you for your time.

APPENDIX 2

INTERVIEW:

Research title: Educators' knowledge and understanding of Attention Deficit Hyperactivity Disorder (ADHD) - A case study of a semi-rural school in KwaZulu-Natal.

Name: _____

Pseudonym: _____

Qualification: _____

Number of years teaching: _____

1. Are you familiarized with the behavioural disorder, namely, Attention Deficit Hyperactivity Disorder (ADHD)?
2. What do you understand about this disorder?
3. How common do you think is this disorder?
4. Do you feel knowledgeable about the symptoms associated with ADHD?
5. Do you think you would be able to identify the symptoms of ADHD in the classroom?
6. Have you identified any learners with symptoms of ADHD?

7. How does the behaviour of a child with ADHD differ from one that does not possess the disorder?
8. If you have identified learners with ADHD, what do you think you should do next?
9. Do you feel comfortable speaking to parents about getting their child evaluated for ADHD?
10. What strategies do you need to undertake in the classroom to include ADHD learners?
11. What intervention programs can you as an educator create to accommodate ADHD in the classroom?
12. What can you do to ensure that parents have the necessary support to deal with their child being diagnosed with ADHD?
13. Do you think that you have the required skills as an educator to deal with ADHD learners?
14. Do you think that you receive sufficient support from the school management, department of education and the parent community to formulate intervention programs for ADHD learners?
15. Do you think that parents are knowledgeable about ADHD?
16. Will you be willing to create a workshop to educate parents about ADHD?

17. Do you think that ADHD is a serious problem in your school and in the surrounding area?

18. Do you think that medication is an effective treatment method for ADHD, or do you believe that the disorder can be maintained without treatment?

19. Have you been trained and given the necessary skills to deal with ADHD in the classroom?

20. Has this research study been beneficial to you and did these questions evoke some kind of thought in you as an educator to conduct research and find out more about ADHD?

Thank you for your time.

APPENDIX 3

LETTER OF CONSENT TO THE PARTICIPANTS:

My name is Joashnie Naidoo and I am currently reading for my Masters in Education degree at the University of Kwa-Zulu Natal. My supervisors for my research study are Dr. S. Ntombela and Ms. M. Kortjass. They can be contacted on the following numbers for confirmation on this research study:

Dr. Sithabile Ntombela	074 100 8689	Ntombelas1@ukzn.ac.za
Ms. Makie Kortjass	031 260 3669	KortjassM@ukzn.ac.za

My study focuses on Educators' knowledge and understanding of Attention Deficit Hyperactivity Disorder (ADHD) - A case study of a semi-rural school in KwaZulu-Natal.

Aims of the Research:

1. To establish educators' knowledge and understanding in regard to Attention Deficit Hyperactivity Disorder (ADHD).
2. To determine methods used to accommodate learners with Attention Deficit Hyperactivity Disorder (ADHD) in teaching and learning.

Significance of the Research Project:

The research project will create awareness of ADHD in the classroom and allow for educators to gain the necessary knowledge and skills to identify symptoms of ADHD amongst the learner population which may result in diagnosis and treatment of the disorder.

Research Plan and Method:

Data will be obtained by conducting face to face interviews with the selected educators. Prior to the interviews, there will be questionnaires handed to the educators to obtain data regarding their knowledge and understanding of ADHD. The interviews will be based on their observations of ADHD learners within the classes that they teach. The interviews will be recorded and thereafter transcribed into written text. The interviews will be kept private

and conducted at the school. Prior to handing out the questionnaire and prior to the interview process, the participants will be given consent forms. The participants will be made aware that participation is strictly voluntary and all information given will be kept confidential. The names of the participants and the name of the school will not be mentioned in the research study. The participants and the school principal may decide to withdraw from the research study at any given time at no obligation or penalty.

School Involvement:

Once I have obtained your consent to approach educators to participate in the research study, I will:

1. Obtain informed consent from the educator participants.
2. Arrange a time with the school for data collection to take place.

The operation of the school will not be disrupted or compromised by this study in any way.

Thank you for your time.

Kind Regards

Mrs Joashnie Naidoo
0611 510 208
joashnie@gmail.com



J. Naidoo

15/07/2016

Date

/Return Slip/

.....

I, _____, an educator at Riverside Secondary School, hereby agree/ do not agree to participate in the above mentioned research.

Signature

Date

APPENDIX 4

LETTER OF CONSENT TO THE SCHOOL PRINCIPAL:

My name is Joashnie Naidoo and I am currently reading for my Masters in Education degree at the University of Kwa-Zulu Natal. My supervisors for my research study are Dr. S. Ntombela and Ms. M. Kortjass. They can be contacted on the following numbers for confirmation on this research study:

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Aims of the Research:

1. To establish educators' knowledge and understanding in regard to Attention Deficit Hyperactivity Disorder (ADHD).
2. To determine methods used to accommodate learners with Attention Deficit Hyperactivity Disorder (ADHD) in teaching and learning.

Significance of the Research Project:

The research project will create awareness of ADHD in the classroom and allow for educators to gain the necessary knowledge and skills to identify symptoms of ADHD amongst the learner population which may result in diagnosis and treatment of the disorder.

Research Plan and Method:

Data will be obtained by conducting face to face interviews with the selected educators. Prior to the interviews, there will be questionnaires handed to the educators to obtain data regarding their knowledge and understanding of ADHD. The interviews will be based on their observations of ADHD learners within the classes that they teach. The interviews will be recorded and thereafter transcribed into written text. The interviews will be kept private

and conducted at the school. Prior to handing out the questionnaire and prior to the interview process, the participants will be given consent forms. The participants will be made aware that participation is strictly voluntary and all information given will be kept confidential. The names of the participants and the name of the school will not be mentioned in the research study. The participants and the school principal may decide to withdraw from the research study at any given time at no obligation or penalty.

School Involvement:

Once I have obtained your consent to approach educators to participate in the research study, I will:

1. Obtain informed consent from the educator participants.
2. Arrange a time with the school for data collection to take place.

The operation of the school will not be disrupted or compromised by this study in any way.

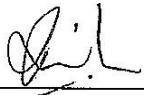
Thank you for your time.

Kind Regards

Mrs Joashnie Naidoo

0611 510 208

joashnie@gmail.com



J. Naidoo

18/07/2016

Date

/Return Slip/

I, L R NAIDOO, the principal of Roseville Secondary School, hereby grant permission to Ms. J. Naidoo to conduct the above mentioned research at our school.



Signature

PROVINCE OF KWAZULU-NATAL	
DEPARTMENT OF EDUCATION & CULTURE ROSEVILLE SECONDARY SCHOOL	
2016 -07- 20	
PRIVATE BAG X0505, UMZINTO 4200 427 LILY ROAD, ROSEVILLE, UMZINTO	
TEL: 039 974 1296 / 039 974 3645	
FAX: 039 974 1296 / 086 511 3793 EMIS 25652	

20/07/2016

Date

APPENDIX 5

LETTER OF CONSENT TO THE CHAIRPERSON OF THE SCHOOL GOVERNING BODY:

My name is Joashnie Naidoo and I am currently reading for my Masters in Education degree at the University of Kwa-Zulu Natal. My supervisors for my research study are Dr. S. Ntombela and Ms. M. Kortjass. They can be contacted on the following numbers for confirmation on this research study:

Dr. Sithabile Ntombela	074 100 8689	Ntombelas1@ukzn.ac.za
Ms. Makie Kortjass	031 260 3669	KortjassM@ukzn.ac.za

My study focuses on Educators' knowledge and understanding of Attention Deficit Hyperactivity Disorder (ADHD) - A case study of a semi-rural school in KwaZulu-Natal.

Aims of the Research:

1. To establish educators' knowledge and understanding in regard to Attention Deficit Hyperactivity Disorder (ADHD).
2. To determine methods used to accommodate learners with Attention Deficit Hyperactivity Disorder (ADHD) in teaching and learning.

Significance of the Research Project:

The research project will create awareness of ADHD in the classroom and allow for educators to gain the necessary knowledge and skills to identify symptoms of ADHD amongst the learner population which may result in diagnosis and treatment of the disorder.

Research Plan and Method:

Data will be obtained by conducting face to face interviews with the selected educators. Prior to the interviews, there will be questionnaires handed to the educators to obtain data regarding their knowledge and understanding of ADHD. The interviews will be based on their observations of ADHD learners within the classes that they teach. The interviews

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School Involvement:

Once I have obtained your consent to approach educators to participate in the research study, I will:

1. Obtain informed consent from the educator participants.
2. Arrange a time with the school for data collection to take place.

The operation of the school will not be disrupted or compromised by this study in any way.

Thank you for your time.

Kind Regards

Mrs Joashnie Naidoo

0611 510 208

joashnie@gmail.com



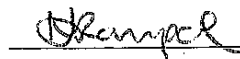
J. Naidoo

20/07/2016

Date

/Return Slip/

.....
I, NIRASHA RAMPAL, the chairperson of the school governing body of Riverside Secondary School, hereby grant permission to Mrs J. Naidoo to conduct the above mentioned research at our school.



Signature

20/07/2016

Date

APPENDIX 6

LETTER OF CONSENT TO THE DEPARTMENT OF BASIC EDUCATION:

My name is Joashnie Naidoo and I am currently reading for my Masters in Education degree at the University of Kwa-Zulu Natal. My supervisors for my research study are Dr. S. Ntombela and Ms. M. Kortjass. They can be contacted on the following numbers for confirmation on this research study:

Dr. Sithabile Ntombela	074 100 8689	Ntombelas1@ukzn.ac.za
Ms. Makie Kortjass	031 260 3669	KortjassM@ukzn.ac.za

My study focuses on Educators' knowledge and understanding of Attention Deficit Hyperactivity Disorder (ADHD) - A case study of a semi-rural school in KwaZulu-Natal.

Aims of the Research:

1. To establish educators' knowledge and understanding in regard to Attention Deficit Hyperactivity Disorder (ADHD).
2. To determine methods used to accommodate learners with Attention Deficit Hyperactivity Disorder (ADHD) in teaching and learning.

Significance of the Research Project:

The research project will create awareness of ADHD in the classroom and allow for educators to gain the necessary knowledge and skills to identify symptoms of ADHD amongst the learner population which may result in diagnosis and treatment of the disorder.

Research Plan and Method:

Data will be obtained by conducting face to face interviews with the selected educators. Prior to the interviews, there will be questionnaires handed to the educators to obtain data regarding their knowledge and understanding of ADHD. The interviews will be based on their observations of ADHD learners within the classes that they teach. The interviews will be recorded and thereafter transcribed into written text. The interviews will be

private and conducted at the school. Prior to handing out the questionnaire and prior to the interview process, the participants will be given consent forms. The participants will be made aware that participation is strictly voluntary and all information given will be kept confidential. The names of the participants and the name of the school will not be mentioned in the research study. The participants and the school principal may decide to withdraw from the research study at any given time at no obligation or penalty.

School Involvement:

Once I have obtained your consent to approach educators to participate in the research study, I will:

1. Obtain informed consent from the educator participants.
2. Arrange a time with the school for data collection to take place.

The operation of the school will not be disrupted or compromised by this study in any way.

Thank you for your time.

Kind Regards

Mrs Joashnie Naidoo

0611 510 208

joashnie@gmail.com



J. Naidoo

15/08/2016

Date

/Return Slip/

I, K.P. Reddy, a representative of the Department of Basic Education, hereby grant permission to Mrs J. Naidoo to conduct the above mentioned research at the selected public school.



Signature

15/08/2016

Date

APPENDIX 7

ETHICAL CLEARANCE CERTIFICATE FROM UKZN RESEARCH OFFICE



10 October 2016

Mrs Joashnie Naidoo 209510382
School of Education
Edgewood Campus

Dear Mrs Naidoo

Protocol reference number: HSS/1087/016M
Project title: Educators' knowledge and understanding of Attention Deficit Hyperactivity Disorder (ADHD) – A case study of a semi-rural school in KwaZulu-Natal.

Expedited Approval

In response to your application dated 19 July 2016, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol have been granted FULL APPROVAL.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. Please note: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully



Dr Shamila Naidoo (Deputy Chair)

/px

cc Supervisor: Prof S Ntombela and Ms M Kortjass
cc Academic Leader Research: Dr SB Khoza
cc School Administrator: Mrs B Bhengu-Mnguni, Mbalenhle Ngcobo, Philisiwe Ncayiyana, Tyzer Khumalo

Humanities & Social Sciences Research Ethics Committee

Dr Shenuka Singh (Chair)

Westville Campus, Govan Mbeki Building

Postal Address: Private Bag X64001, Durban 4000

Telephone: +27 (0) 31 260 3587/8350/4557 Facsimile: +27 (0) 31 260 4609 Email: ximbap@ukzn.ac.za / snvmanm@ukzn.ac.za / mohunp@ukzn.ac.za

Website: www.ukzn.ac.za

APPENDIX 8

LANGUAGE EDITOR'S CERTIFICATE

lindac@skytec.co.za | 083 344 0706



Research Skills

Development Services CC

Income Tax No. 9249355208; CC Founding Statement No. CK94/16841/23 SARS; Tax Clearance Certificate No. 1994/016841/23

SACE REGISTRATION NUMBER: N.D. COERTZE – 1082433 (2003)

DECLARATION OF PROOF-READING

TO WHOM IT MAY CONCERN

I, Nicolina D. Coertze, declare that I meticulously perused the manuscript referred to below for language editing purposes. I endeavoured, to the best of my knowledge and ability, to identify linguistic and stylistic inaccuracies that may have been omitted during the initial editing stages by the author and the supervisor. Using the *Word Tracking* system, I kept track of any changes that I made and I also offered annotations as recommendations to the author for additional review of areas that I considered to be linguistically flawed. I declare that I adhered to the general principles that guide the work of a language editor and that I remained within my brief as had been agreed with the author of the manuscript.

Details:

TITLE	Educators' Knowledge and understanding of attention deficit hyperactivity disorder (ADHD): A case study of a rural school in KwaZulu-Natal
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DATE	01 March 2019
NAME	JOASHNIE NAIDOO
QUALIFICATION	MASTER OF EDUCATION In EDUCATIONAL PSYCHOLOGY
DEPARTMENT	UNIVERSITY OF KWAZULU-NATAL EDGEWOOD CAMPUS
SUPERVISOR	Dr Sithabile Ntombela and Ms Makie Kortjass

Respectfully submitted on 01 March 2019

(MRS) N.D. COERTZE