

**The Effectiveness of Child-Centered Play Therapy on Learners with
Attention-Deficit/Hyperactivity Disorder**

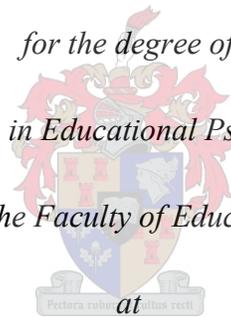
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DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third-party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

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ABSTRACT

Attention-Deficit/Hyperactivity Disorder (ADHD) is one of the most common childhood psychiatric conditions. The criticism of and often resistance to psychopharmacological and behavioural treatment methods, the two most commonly used interventions for children identified as having ADHD, expose the importance of developing interventions that not only address children's behavioural difficulties, but also their emotional, social, and developmental needs (Goodman & Linn, 2003; Seltzer & Krauss, 2001). Child-Centered Play Therapy (CCPT) is an approach to play therapy that allows for non-directive therapeutic sessions between the child and therapist. The aim of this study was to examine the effectiveness of CCPT as an intervention that reduces teacher-identified and parent-identified behavioural and emotional difficulties among children diagnosed with ADHD (predominantly hyperactive/impulsive presentation). A quantitative methodology was followed and a quasi-experimental research design, specifically a time series design, was used to investigate changes in children's behaviours, emotions and academic performance across baseline and intervention conditions. For this study, the target population included children formally diagnosed with ADHD, attending a school for children with physical and learning difficulties in the Western Cape. A group of children aged between 8 and 10 years was selected. The Vanderbilt ADHD Rating Scales (VADRS) for children aged 6 to 12 years was used to collect data and quantitative data analysis was performed. After the analyses of teacher responses over eight time points, statistically significant differences between data at various time points were found in the following categories: combined inattention and hyperactivity, defiance, and low mood and anxiety ($P < 0.01$); academic performance ($P < 0.05$); and a trend for inattention (significant at 10%, $p = 0.09$). No significant differences were found between time points for the hyperactivity/impulsivity category. After the analyses of parent responses over four time points, statistically significant differences between data at various time points were found in all

categories ($P < 0.01$). After the analyses of combined teacher parent responses over four time points, statistically significant differences between data at various time points were found in all categories ($P < 0.01$). Although the results of this study are promising, the nature of this study necessitates the need to conduct further CCPT-based interventions with individuals diagnosed with ADHD.

OPSOMMING

Aandagtekort/Hiperaktiwiteitsversteuring (ADHD) is een van die mees algemene psigiatriese versteurings by kinders. Algemene kritiek van en selfs weerstand teen psigofarmakologiese - en gedragsintervensies dien as motivering om intervensies te ondersoek wat nie net kinders met ADHD diagnoses, se gedragsprobleme aanspreek nie, maar ook hul emosionele-, sosiale- en ontwikkelingsbehoefte (Goodman & Linn, 2003; Seltzer & Krauss, 2001). Kind-gesentreerde speltherapie (CCPT) is 'n non-direktiewe benadering tot speltherapie tussen kind en terapeut. Die doel van hierdie studie was om die effektiwiteit van CCPT sessies as intervensie om gedrags- en emosionele probleme soos waargeneem deur onderwysers en ouers, te ondersoek by kinders met ADHD diagnoses. 'n Kwantitatiewe metodologie binne 'n kwasi-eksperimentele ontwerp, en meer spesifiek, 'n tyd-reeks ontwerp, is gevolg om veranderinge in die kinders se gedrag, emosies en akademiese vordering vanaf 'n basislyn en deur die intervensie proses na te volg. Kinders wat reeds gediagnoseer was met ADHD, en wat 'n skool in die Wes-Kaap vir kinders met fisiese en spesifieke leerbehoefte bywoon, is vir die doel van hierdie studie geïdentifiseer as die populasie. 'n Groep kinders tussen die ouderdomme van 8 en 10 jaar is geselekteer om deel te neem aan die studie. The 'Vanderbilt ADHD Rating Scales' (VADRS) vir kinders tussen die ouderdomme van 6 en 12 jaar is gebruik om data in te samel wat daarna kwantitatief ge-analiseer is. Na analise van die terugvoer deur onderwysers, is gevind dat statisties beduidende verskille bestaan tussen die data tydens ag (8) verskillende punte in tyd. Hierdie verskille het voorgekom in die volgende kategorieë: gekombineerde aandagafleibaarheid en hiperaktiwiteit, uittarting, en lae gemoed ($P < 0.01$); akademiese prestasie ($P < 0.05$); en 'n neiging tot aandagafleibaarheid (beduidend by 10%, $p = 0.09$). Geen beduidende verskille is gevind by verskillende punte in tyd, in die hiperaktiwiteit/impulsiwiteit kategorie nie. Na analise van die terugvoer vanaf ouers, oor vier (4) verskillende punte in tyd, is statisties beduidende

verskille gevind in al die kategorieë ($P < 0.01$). Analise van die gekombineerde onderwyser/ouer response het statisties beduidende verskille tussen verskeie punte in tyd, in al die kategorieë aangedui ($P < 0.01$). Al lyk die resultate belowend, noodsaak die aard van hierdie studie dit egter om verdere studies te onderneem om die waarde van CCPT as intervensie vir kinders met ADHD diagnoses te bevestig.

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CHAPTER 1

CONTEXT AND RATIONALE OF THE STUDY

1.1 INTRODUCTION

Attention-Deficit/Hyperactivity Disorder (ADHD) is one of the most common childhood psychiatric conditions. The prevalence rate in the United States is indicated as 11% (Bitsko, Danielson, Holbrook, Visser, & Zablotsky, 2015). The prevalence rate of ADHD in South Africa has not been officially determined yet. However, it is estimated that 8-10% of South African children experience symptoms associated with ADHD (Muthukrishna, as cited in Lloyd, Stead, & Cohen, 2006; Topkin, Roman & Mwaba, 2015). The core symptoms of ADHD as described in the Diagnostic and Statistical Manual (5th edition) (DSM5) are hyperactivity, impulsivity and/or inattention (American Psychological Association, 2013). These symptoms can lead to difficulties surrounding academic achievement, behaviour, personal relationships with family and peers and low self-esteem. Symptoms mostly first appear in childhood and can continue through adolescence into adulthood (Van der Westhuizen, 2010).

As noted by Perold, Louw and Kleynhans (2010), children spend most of their time in classrooms and other school settings. Here they are expected to follow the rules, behave in socially acceptable ways, take part in academic activities and withhold from disrupting the learning process or activities of others. This all becomes far more challenging if a child presents with the above-mentioned symptoms and/or has been diagnosed with ADHD. The child's difficulty with attention span, impulse control and differences in activity levels frequently interfere with both classroom and social activities (Perold et al., 2010). Children diagnosed with ADHD often also experience interpersonal problems with family members, teachers and peers. They are often bothersome, socially awkward, intense and insensitive

to others (Mash & Wolfe, 2010). Therefore, there is an overwhelming need for timely interventions that address side effects of ADHD behaviour.

The criticism of, and often resistance to, psychopharmacological and behavioural treatment methods, the two most commonly used interventions for children identified as having ADHD, expose the importance of developing new interventions. These interventions should address children's behavioural difficulties as well as their emotional, social, and developmental needs (Goodman & Linn, 2003; Seltzer & Krauss, 2001). Play therapy refers to interventions that address the cognitive, social, and emotional development of children. It is well documented that play therapy is an effective approach for supporting children with an array of emotional and behavioural difficulties (LeBlanc & Ritchie, 2001; Muro, Ray, Schottelkorb, Smith, & Blanco, 2006).

Child-Centered Play Therapy (CCPT) is an approach to play therapy that allows for non-directive therapeutic sessions between the child and therapist. The therapist follows Virginia Axline's eight basic principles of developing a caring relationship. These principles are: being non-judgmental, providing a safe environment, being sensitive to feelings, allowing the child to solve personal problems, trusting the child's inner direction, appreciating the gradual nature of the process, and establishing only necessary therapeutic limits that help improve the relationship (1947, p. 73-74). The child leads the session, and the therapist follows his or her lead through the reflection of content, feeling, and behaviour (Landreth, 2012, p. 73-82). Axline developed this approach to play therapy based on Carl Rogers' person-centered theory regarding human development and therefore also psychotherapy (Rogers, 1956).

During CCPT sessions, children learn to discover their inner strengths and become more self-accepting, self-reliant, and self-directing. Rogers' person-centered approach assumes that given the ideal circumstances of empathy, authenticity on the side of the therapist and unconditional positive regard (Rogers, 1956), a person's natural tendency towards self-actualisation will be able to unfold (Rogers, 1956).

1.2 RATIONALE FOR THE STUDY

Having taught children diagnosed with ADHD and having interacted with their parents, the parents' experience of the disorder has become a part of the researcher's reality for the past five years. Parents are often reluctant to make use of the more conventional methods of treatment for ADHD, such as pharmacology and behavioural modification. Table 1.1 shows possible factors that delay initiation of medication by parents of children diagnosed with ADHD. These factors were found in a study done by Brinkman, Sherman, Zmitrovich, Visscher, Crosby, Phelan and Donovan (2009, p. 584). The table includes actual quotes from parents involved in the study.

Table 1.1 *Factors that delay initiation of medication by parents of children diagnosed with ADHD*

Denial	<p>“I think I kind of fought it tooth and nail. I just kept comparing him to other boys, in my mind thinking he’s just active. I didn’t think there was anything wrong with him.”</p> <p>“...I found it hard to believe that he was as bad as they were all saying he was in school. I mean bad not in terms of behaviour, but just complete inability to function in the classroom.”</p>
Poor communication with teacher	<p>“At the end of the year I got a little folder and daydreaming was written all over it. The teacher never said anything to me about it.”</p>
Lack of confidence in diagnosis	<p>“We struggled and are still struggling with the diagnosis. She carries that label of ADD, but we are not entirely sure.”</p>

Story or experience that opposes medication	<p>“I had a niece on medication who was more like a vegetable, didn’t want to eat, talk, play, nothing.”</p> <p>“The side effects of the drugs and all the horror stories that you hear. His mom’s grandmother is a nurse, and so I hear it all the time. She doesn’t agree with the medicine.”</p>
Lack of physician support or trust	“I felt intimidated by him because I knew he talked basically and he didn’t want to hear any questions from you.”
Lack of support from relatives	“I got really irritated with a few friends and family that—Gasp! You put your daughter on medicine!! How could you do such a thing?”
Information sources that oppose medicine	“I think through the years they had too many things in magazines and so many things on television that scare you half to death when it comes to Ritalin.”
Stigma	<p>External stigma: “I don’t want my child or anyone else’s child to be labeled.”</p> <p>Internal stigma: “She just feels different, because she knows she has to take medicine every day and most kids don’t.”</p>
General reluctance to use medications	<p>“I was scared. What have I done? It’s like, I know my child is suffering, but drugs? Is there another way?”</p> <p>“Giving your child medication that affects their brain. I was pretty scared about it and still am. There is still a part of me that thinks I don’t care that kids have been on this for 50 years, I don’t like it.”</p>

Note. Adapted from Brinkman et al., 2009, p. 584.

Although these methods of pharmacology and behavioural modification are successful in many cases, the researcher found that there was a need for alternative intervention plans or at least complementary approaches to support children with this diagnosis. While working through the theoretical component of the programme, MEd in Educational Psychology, the researcher was introduced to CCPT. She was immediately drawn to this method of play therapy.

Phrases such as “Stop that”, “No” and “Sit still” are phrases that children diagnosed with ADHD, specifically predominantly hyperactive/inattentive presentation, hear far too often. CCPT would provide the child with a safe place where they would mostly be able to do as they please without any consequences, without hearing those dreaded phrases. The researcher found herself wondering about the benefits of such a method when it comes to addressing the psychological side-effects of a disorder such as ADHD. This was when the research began.

Several studies testing the effectiveness of CCPT in relation to ADHD have proven successful (Bratten, Ray, Rhine, & Jones, 2005; Kot, Landreth, & Giordano, 1998; Le Blanc & Richie, 2001; Muro, Ray, Schottelkorb, Smith, & Blanco, 2006; Ray, Schottelkorb, & Tsai, 2007; Swan, 2011; Glover & Landreth, as cited in O’Connor, Schaefer & Braverman, 2016). However, in South Africa, this is not the case. While researching existing South African literature, it was found that there is a lack of studies exploring the effectiveness of such an intervention in the South African context. Therefore, the need for a similar study, examining the effectiveness of CCPT as an intervention approach for ADHD in South Africa, arose. It was thought to be useful to explore whether similar positive results would be yielded in a South African sample.

1.3 PROBLEM STATEMENT

As mentioned previously, ADHD is one of the most common childhood psychiatric conditions (APA, 2013). Psychopharmacology and behavioural methods are mostly used for treating children diagnosed as having ADHD. However, these interventions often do not consider the emotional, psychological, or developmental aspects of the child's existence. This shows that there may be a need for alternative and perhaps complementary approaches to the treatment and support of children diagnosed with

ADHD. As indicated, multiple studies worldwide have shown that CCPT could be effective in reducing behavioural difficulties associated with ADHD in children (Bratten, Ray, Rhine, & Jones, 2005; Kot, Landreth, & Giordano, 1998; Le Blanc & Richie, 2001; Muro, Ray, Schottelkorb, Smith, & Blanco, 2006; Ray, Schottelkorb, & Tsai, 2007; Swan, 2011). However, there is a lack of such studies done in South Africa. This research seeks to address this gap in the knowledge within South Africa, and has the following aim with the study.

1.3.1 Aim of Study

The aim of this study was to investigate the effectiveness of CCPT as an intervention that reduces teacher-identified and parent-identified behavioural and emotional difficulties among children diagnosed with ADHD (predominantly hyperactive/impulsive presentation). Specifically, a quantitative methodology was followed and a quasi-experimental research design was used to investigate changes in children's behaviours, emotions and academic performance across baseline and intervention conditions. A more detailed description of the research study will follow.

1.3.2 Research Questions

For the purpose of this study the following primary research question has been formulated:

- *Does an intervention of CCPT have an effect on the behaviour, emotions and academic performance of children who have been diagnosed with ADHD?*

Secondary research questions to be explored:

- *What do parents of children diagnosed with ADHD notice in their child's behaviour, emotions and academic performance, at home, before, during and after an intervention of CCPT has taken place?*

- *What do teachers of learners diagnosed with ADHD notice in learners' behaviour, emotions and academic performance, in the classroom, before, during and after an intervention of CCPT has taken place?*

1.3.3 Research Hypothesis

Due to the quantitative nature of the research design, the following research hypotheses have been formulated:

H₀: An intervention of CCPT has no effect on the behaviour, emotion and academic performance of children diagnosed with ADHD.

H₁: An intervention of CCPT has an effect on the behaviour, emotion and academic performance of children diagnosed with ADHD

1.4 REVIEW OF THE KEY CONCEPTS

Before the structure of this presentation is outlined, a review of the key concepts is necessary.

1.4.1 Child-Centered Play Therapy (CCPT)

Child-Centered Play Therapy approaches play therapy in a non-directive manner. This approach allows for non-directive therapeutic sessions between child and therapist. The therapist follows Axline's eight basic principles of developing a caring relationship: being non-judgmental, providing a safe environment, being sensitive to feelings, allowing the child to solve personal problems, trusting the child's inner direction, appreciating the gradual nature of the process, and establishing only necessary therapeutic limits that help improve the relationship. The child leads the session, and the therapist follows his or her lead through the reflection of content, feeling, and behaviour (Landreth,

Baggerly, & Tyndall-Lind, 1999). During CCPT, children learn to discover their inner strengths and become more self-accepting, self-reliant, and self-directing. Children may also develop self-awareness and begin to assume responsibility and become resourceful in problem-solving activities (Paone & Douma, 2009).

1.4.2 Attention-Deficit/Hyperactivity Disorder (ADHD)

ADHD can be summarised in the following way: It is a constant pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning and/or development. Six or more of the symptoms that are listed in the DSM 5 need to have persisted for at least six months. These symptoms need to be to the degree that is inconsistent with developmental level, and that negatively impacts on social and academic or occupational activities. Some inattentive or hyperactive-impulsive symptoms are present before the age of 12, and various inattentive or hyperactive/impulsive symptoms are present in two or more settings, for example at home, at school, at work. There is a need for direct evidence that the symptoms interfere with, or reduce the quality of, social, academic or occupational functioning. These symptoms must not occur exclusively during schizophrenia or another psychotic disorder. The symptoms must not be better explained by another mental disorder (e.g. anxiety disorder, mood disorder, personality disorder, dissociative disorder, substance intoxication or withdrawal) (APA, 2013).

1.4.3 Specific Learning Disorder (SLD)

A SLD includes difficulties in learning and the use of academic skills despite the presence of interventions that target those difficulties. The difficulty could be in the areas of reading, written expression and/or mathematics (APA, 2013).

1.4.4 Learner

In the context of this research, a learner refers to a child attending school.

1.4.5 Effectiveness

Effectiveness can be defined as the degree to which something is successful in producing the desired result (Hornby, Deuter, Bradbery, Turnbull, Heyning-Plate, Holloway, and Ashby, 2015). As used in this study, effectiveness refers to the degree with which CCPT as an intervention is successful in reducing behavioural and emotional difficulties in children diagnosed with ADHD.

1.5 THEORETICAL FRAMEWORK

Without a foundation from which to build, research can come across as ungrounded or unsupported. The theoretical framework of a study serves as its foundation by grounding it in a specific theory and giving direction and meaning to the research process (Merriam, as cited in Megaw, 2011).

The theory that has informed the research topic is Albert Bandura's Social Cognitive Theory, and more specifically, his model of reciprocal determination. Bandura uses his model of reciprocal determinism to explain how an individual's behaviour influences and is influenced by personal characteristics and the social environment (Bandura, 1999). The model involves three components, namely personal, behavioural, and environmental factors that interact and influence each other reciprocally. These three factors are interdependent (Bandura, 1999). Personal factors include beliefs, attitudes and biological factors of the individual. The behavioural factors consist of responses to stimuli. These responses can range from positive to negative. Environmental factors include the roles played by parents, teachers

and peers as well as the physical environment including the school system. All three groups of factors can influence an individual's behaviour and self-belief (Bandura, 1999).

Within this theory, the intervention of CCPT was informed by Carl Rogers' Person-Centered Approach. The Person-Centered Approach to psychotherapy moves away from the idea that the therapist is the expert. It is an approach in which the natural tendency, known as the actualising tendency, of human beings to find the fulfilment of their potential, is trusted. Rogers (1951) describes the psychological environment as one where the person feels free from any threat, physically and psychologically. He held the belief that this environment could be achieved through a relationship with a therapist who is empathetic, congruent and shows unconditional positive regard (British Association for the Person-Centered Approach, 2015; Rogers, 1951).

The researcher holds the belief that these theories are applicable when it comes to a CCPT intervention involving children diagnosed with ADHD. This will be further discussed and expanded on in Chapter 2. The theoretical framework has played a role in and informed the researcher's planning and decisions made in the research process (Mertens, 1998). The theoretical framework, therefore, influences the methods, methodology and the beliefs or paradigm underpinning the research.

1.6 RESEARCH METHODOLOGY

Figure 1.1 offers a visual summary of the research process used in this study. The figure illustrates the various steps that were involved. This helps to provide the reader with a quick overview of the research methodology employed. Figure 1.1 will also be discussed in-depth in Chapter 3.

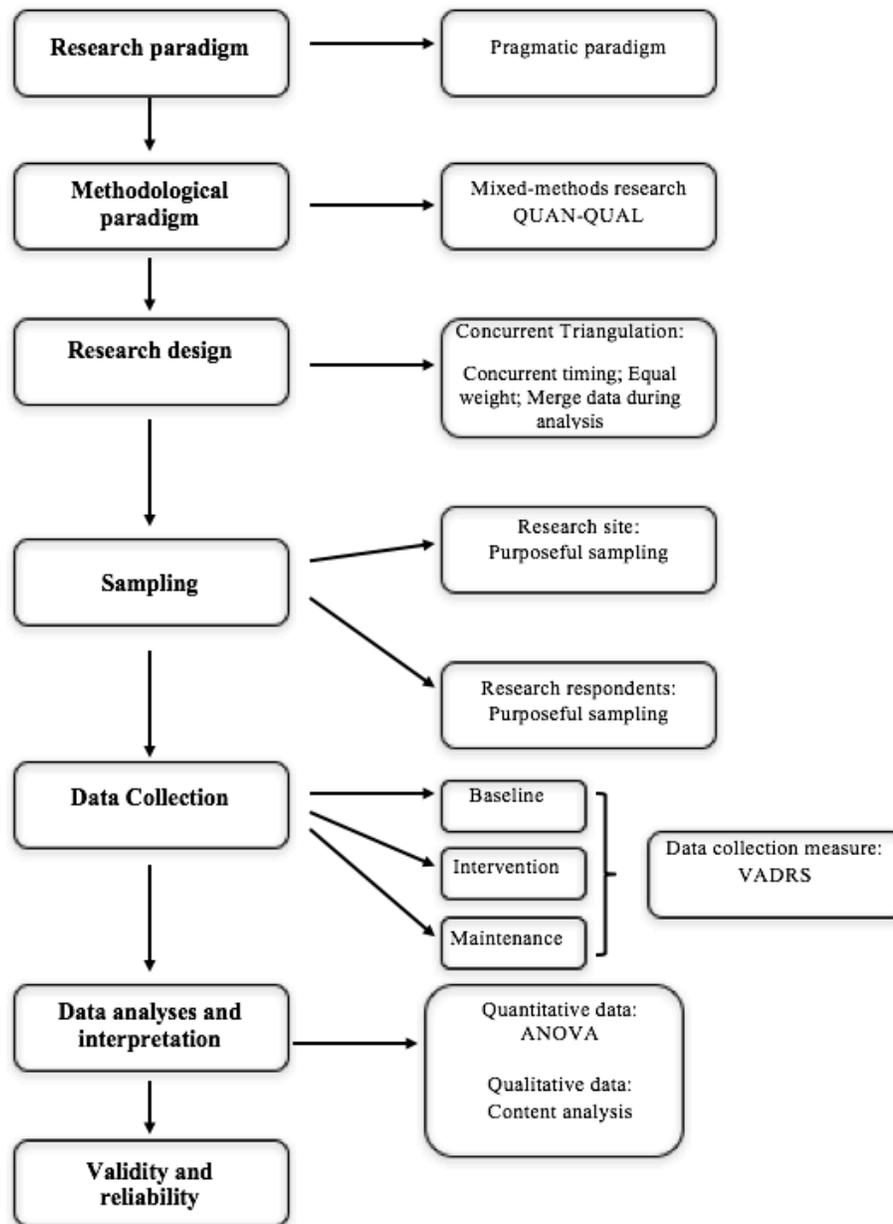


Figure 1.1. A visual summary of the research process as used in this paper.

1.7 Ethical Considerations

Ethical guidelines and considerations are paramount in research as they guard against possible harmful effects of the research at hand (Mertens, 2005). As stated by Horn, Graham, Prozesky and Theron

(2015), all research involving human subjects must comply with ethical principles. The specific principles, as well as how they were adhered to, will be discussed in Chapter 3.

Permission to do the research was acquired from the Western Cape Department of Education (WCED) (Addendum B). The subjects were informed that they were under no obligation to take part in the research and that although the researcher had the consent of the WCED participants were free to withdraw at any time if they so wished. Subjects were informed both verbally and in writing that the source of the data collected and their responses would be treated confidentially. However, they were made aware that their participation might be known to other learners, and staff of the school. The participation was based on age and grade, but further random and voluntary. No risk was anticipated in the participation of the intervention. Permission to conduct the research in this school was obtained from the headmaster of the school (see Appendix C). The researcher applied for ethical clearance from the Research in Ethics Committee (REC) of Stellenbosch University. The REC granted permission to conduct the study (see Appendix A).

1.8 STRUCTURE OF PRESENTATION

This research report has been structured in the following way:

- Chapter one: This chapter focuses on introducing the study and contextualising the research. It also briefly outlined the research process, which was implemented to conduct the study.
- Chapter two: This chapter provides an in-depth review of relevant and existing literature on the topic.

- Chapter three: In this chapter, a comprehensive discussion of the research process, including research methodology, research design, and research paradigm, as well as the ethical principles considered, is presented.
- Chapter four: The research findings are presented in this chapter, followed by a discussion and interpretation.
- Chapter five: In conclusion, the research questions/hypotheses, a summary of the findings, recommendations, as well as possible limitations and strengths of the study are addressed.

1.9 CONCLUSION

This chapter aimed at providing the reader with a background to the study to provide an orientation to the research conducted. Furthermore, it aimed at contextualising the research, as well as motivating its importance. The hope is that this chapter will assist the reader in understanding why CCPT may be an effective therapy for children diagnosed with ADHD, or at least why it is worth researching. Lastly, it provided an outline of the research process to be implemented while placing it into a theoretical framework.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

As mentioned in Chapter 1, children spend the largest part of their day in classrooms and other school settings. In these settings, they are expected to follow the rules, behave in socially acceptable ways, take part in academic activities and try not to disrupt the learning process or activities of others (Perold et al., 2010). This all is experienced as far more challenging if a child displays ADHD type of behaviour and/or has been formally diagnosed with ADHD. The child's difficulty with attention span, impulse control and differences in activity levels frequently interfere with both classroom and social activities (Perold et al., 2010). Children diagnosed with ADHD often also experience interpersonal problems with family members, teachers and peers (Mash & Wolfe, 2010). Phrases such as "Stop that", "No" and "Sit still" are phrases that children diagnosed with ADHD, specifically predominantly hyperactive/inattentive presentation, hear far too often. Therefore, there is a need to provide children with a safe place, that is free of these judgmental phrases, to address not only behavioural difficulties, but also their emotional, social, and developmental needs (Goodman & Linn, 2003; Seltzer & Krauss, 2001).

Play therapy refers to a range of interventions that address the cognitive, social, and emotional development of children. It is well documented that play therapy is an effective approach for supporting children with an array of emotional and behavioural difficulties (LeBlanc & Ritchie, 2001; Muro, Ray, Schottelkorb, Smith, & Blanco, 2006). Child-Centered Play Therapy (CCPT) is a specific theoretical approach to play therapy that allows for non-directive therapeutic sessions between the child and therapist. The therapist follows Virginia Axline's eight basic principles of developing a

caring relationship: being non-judgmental, providing a safe environment, being sensitive to feelings, allowing the child to solve personal problems, trusting the child's inner direction, appreciating the gradual nature of the process, and establishing only necessary therapeutic limits that help improve the relationship (1947, p. 73-74). The child leads the session, and the therapist follows his or her lead through the reflection of content, feeling, and behaviour (Landreth, 2012, p. 73-82). During CCPT sessions, children learn to discover their inner strengths and become more self-accepting, self-reliant, and self-directing. This approach is based on Rogers' person-centered approach which assumes that given the ideal circumstances of empathy, authenticity on the side of the therapist and unconditional positive regard, a person's natural tendency towards self-actualisation will be able to unfold (Rogers, 1956). This form of therapeutic intervention, CCPT, may provide such a safe, non-judgmental environment that a child diagnosed with ADHD needs to develop the skills to navigate through life despite the difficulties associated with ADHD successfully. In this chapter, ADHD, as well as CCPT, will be discussed in detail. The potential role of CCPT in ADHD will also be argued.

2.2 ATTENTION-DEFICIT/HYPERACTIVITY DISORDER (ADHD)

2.2.1 Definition

The APA (2013) summarises ADHD in the following way:

A persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development; six or more of the symptoms, listed in the DSM 5, have persisted for at least six months to the degree that is inconsistent with developmental level and that negatively impacts directly on social and academic/occupational activities; several inattentive or hyperactive-impulsive symptoms were present prior to age 12 years; several

inattentive or hyperactive-impulsive symptoms are present in two or more settings (e.g. at home, school, or work; with friends or relatives; in other activities); there is clear evidence that the symptoms interfere with, or reduce the quality of, social, academic or occupational functioning; and the symptoms do not occur exclusively during the course of schizophrenia or another psychotic disorder and are not better explained by another mental disorder (e.g. mood disorder, anxiety disorder, dissociative disorder, personality disorder, substance intoxication or withdrawal) (p. 59-60).

Daniels (2005) notes that children who have ADHD often fail to give attention to details, make careless mistakes, have difficulty sustaining attention, appear not to listen, struggle to follow instructions, have difficulty with organisation, are easily distracted and are forgetful. The hyperactive child tends to fidget and has great difficulty remaining seated. They may run around or climb excessively. They appear to be driven by a motor and talk excessively. When talking, children diagnosed with ADHD often blurt out answers before questions are completed.

2.2.2 History of the diagnosis

ADHD symptoms were first described in a 1775 medical textbook by a German physician named Melchior Adam Weikard (Barkley & Peters, 2012; Mash & Wolfe, 2016). Mash and Wolfe (2016) note that since then there have been multiple explanations for the group of behaviours called ADHD. In the early 1900s, there was a focus on children with symptoms of ADHD due to the onset of widespread compulsory education. The nature of such an educational setting demanded self-controlled behaviour in a group situation and children who lacked this control were said to have poor “inhibitory volition” and “defective moral control” (Mash & Wolfe, 2016). Following the worldwide influenza

epidemic, from 1917 to 1926, another view of ADHD emerged. Some children developed brain inflammation but survived the outbreak. These children experienced multiple behaviour problems, including irritability, impaired attention and hyperactivity. This was labelled *brain-injured child syndrome* and was associated with intellectual disability (Mash & Wolfe, 2016). In the 1940s and 1950s, this label started to be applied to children who displayed similar behaviour but with no evidence of intellectual disability or brain damage. This led to the development of the terms *minimal brain damage* and *minimal brain dysfunction (MBD)* (Strauss & Lehtinen, 1947; Mash & Wolfe, 2016).

ADHD was referred to as *hyperkinesis* in the late 1950s. It was attributed to poor filtering of stimuli entering the brain (Denhoff, Laufer, & Solomans, 1957; Mash & Wolfe, 2016). This is what led to the definition of the *hyperactive child syndrome*, in which motor over-activity was considered the central feature of ADHD (Chess, 1960; Mash & Wolfe, 2016). In 1970, it was argued that deficits in attention and impulse control, in addition to hyperactivity, were also symptoms of ADHD (Douglas, 1972; Mash & Wolfe, 2016). Mash and Wolfe (2016) note that this view was widely accepted and has had a lasting impact on the criteria of the *Diagnostic and Statistical Manual of Mental Disorders (DSM)* for defining ADHD. The 1980s saw a dramatic increase in the interest in children with ADHD and the rise in stimulant use generated controversy that continues to this day (Mash & Wolfe, 2016). This controversy is one of the motivations for this study and for developing alternative, complementary interventions to ADHD.

2.2.3 Key symptoms

ADHD is placed in the section on *neurodevelopmental disorders* in the DSM-5. It falls in this category because it has an early onset and persistent course; it is affiliated with lasting alterations in neural

development; and it often occurs alongside subtle delays and difficulties in language, motor, and social development that overlaps with other neurodevelopmental disorders (APA, 2013; Mash & Wolfe, 2016). The key symptoms of ADHD fall into two categories namely, symptoms of inattention and hyperactivity-impulsivity.

Inattention refers to the inability to sustain attention, particularly for repetitive structured, and less enjoyable tasks (Nigg & Barkley, 2014). Deficits may be visible in one or more types of attention (attentional capacity, selective attention, distractibility, sustained attention/vigilance) (Langer & Eickhoff, 2013; Milich & Lorch, 1994; Mash & Wolfe, 2016; Taylor, 1995). Hyperactivity-Impulsivity refers to the inability to inhibit dominant or ongoing behaviour voluntarily. Hyperactive behaviours include fidgeting and difficulty staying seated; moving, running, excessive touching, excessive talking; and energetic, intense, inappropriate and non-goal-directed behaviours (Mash & Wolfe, 2016). Impulsivity involves the inability to control immediate reactions (the ability to think before acting on something). There are various types of impulsivity as noted by Mash and Wolfe (2016). These include:

1. Cognitive impulsivity (including disorganisation, hurried thinking, and need for supervision);
2. Behavioural impulsivity (including difficulty inhibiting responses when required); and
3. Emotional impulsivity (including impatience, frustration, temper, anger, irritability).

2.2.4 Diagnosis

ADHD can be diagnosed by a paediatrician or other primary care provider, or by a mental health professional, such as a psychologist or psychiatrist (Ahmann, Saviet, & Tuttle, 2017). According to the Centers for Disease Control and Prevention (CDC), about half of diagnoses are made by a primary

care provider (Ahmann, Saviet, & Tuttle, 2017; Visser et al., 2015). The American Academy of Pediatrics (AAP) (2011) recommends that diagnosis incorporates both the use of standardized rating scales based on criteria from the widely-referenced Diagnostic, and Statistical Manual of Mental Disorders (DSM) and information from multiple sources (e.g., parents, other family members, and teachers) (Ahmann, Saviet, & Tuttle, 2017). Current DSM-5 diagnostic criteria include at least six designated symptoms of inattention and/or hyperactivity/impulsivity appearing before age 12 years, with symptoms present for at least six months, occurring in more than one setting, and of a degree that is impairing to functioning or normal development (APA, 2013; Ahmann, Saviet, & Tuttle, 2017). Mash and Wolfe (2016) note that the DSM-5 criteria for ADHD were developed after reviewing research, re-analyzing data, conducting field trials with children and receiving public feedback (APA, 2013). Please see below for a full description of the DSM-5 (2013) diagnostic criteria for ADHD (APA, 2013).

A. A persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development, as characterised by (1) and/or (2):

1. **Inattention:** Six (or more) of the following symptoms have persisted for at least 6 months to a degree that is inconsistent with developmental level and negatively impacts directly on social and academic/occupational activities:

Note: The symptoms are not solely the manifestation of oppositional behaviour, defiance, hostility, or failure to

understand tasks or instructions. For adolescents and adults (age 17 and older), at least five symptoms are required.

- a. Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or other activities.
 - b. Often has difficulty sustaining attention in tasks or play activities.
 - c. Often does not seem to listen when spoken to directly.
 - d. Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behaviour or failure to understand instructions).
 - e. Often has difficulty organising tasks and activities.
 - f. Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework).
 - g. Often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools).
 - h. Is often easily distracted by extraneous stimuli.
 - i. Is often forgetful in daily activities.
2. **Hyperactivity and Impulsivity:** Six (or more) of the following symptoms of hyperactivity-impulsivity have persisted for at least

6 months to a degree that is inconsistent with developmental level:

Note: The symptoms are not solely the manifestation of oppositional behaviour, defiance, hostility, or failure to understand tasks or instructions. For adolescents and adults (age 17 and older), at least five symptoms are required.

- a. Often fidgets with hands or feet or squirms in seat.
- b. Often leaves seat in classroom or in other situations in which remaining seated is expected.
- c. Often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings or restlessness).
- d. Often has difficulty playing or engaging in leisure activities quietly.
- e. Is often “on the go” or often acts as if “driven by a motor”.
- f. Often talks excessively.
- g. Often blurts out answers before questions have been completed.
- h. Often has difficulty awaiting turn.
- i. Often interrupts or intrudes on others (e.g., butts into conversations or games).

B. Several inattentive or hyperactive-impulsive symptoms that caused impairment were present before age 12 years.

- C. Several inattentive or hyperactive-impulsive symptoms are present in two or more settings (e.g., at home, at school, or work; with friends or relatives; in other activities).
- D. There must be clear evidence that the symptoms interfere with, or reduce the quality of, social, academic, or occupational functioning.
- E. The symptoms do not occur exclusively during the course of schizophrenia, or another psychotic disorder and are not better accounted for by another mental disorder (e.g., mood disorder, anxiety disorder, dissociative disorder, personality disorder, substance intoxication or withdrawal).

Specify whether:

Combined presentation: If both Criterion A1 and Criterion A2 are met for the past 6 months.

Predominantly inattentive presentation: If Criterion A1 is met but Criterion A2 is not met for the past 6 months.

Predominantly hyperactive-impulsive presentation: If Criterion A2 is met but Criterion A1 is not met for the past 6 months.

Specify if:

If in partial remission: When full criteria were previously met, fewer than the full criteria have been met for the past 6 months, and the symptoms still result in impairment in social, academic, or occupational functioning.

Specify current severity:

Mild: Few, if any symptoms in excess of those requirements to make the diagnosis are present, and symptoms result in no more than minor impairment in social or occupational functioning.

Moderate: Symptoms or functional impairment between “mild” and “severe” are present.

Severe: Many symptoms in excess of those requirements to make the diagnosis, or several symptoms that are particularly severe, are present, or the symptoms result in marked impairment in social or occupational functioning.

(p 59-61)

2.2.5 Associated Difficulties

In addition to the primary difficulties linked to ADHD, children often display other difficulties such as cognitive deficits, speech and language impairments, medical and physical concerns, and social problems (Mash & Wolfe, 2016). These difficulties will be discussed in sections 2.1.5.1 to 2.1.5.4.

2.2.5.1 Cognitive deficits

Children diagnosed with ADHD display a variety of cognitive deficits, including deficits in executive functions, intellectual deficits, difficulties in academic functioning, learning disorders, and distorted self-perceptions (Mash & Wolfe, 2016).

2.2.5.2 Speech and language impairments

According to Helland, Biringir, Helland, and Heiman (2012), 30% to 60% of children with ADHD also have speech and language impairments. It has been found that the type of speech and language

impairment may be related to the child's specific ADHD symptoms (Gremillion & Martel, 2013; Mash & Wolfe, 2016). A few common impairments are excessive and loud talking, frequent shifts and interruptions in conversation, inability to listen, and inappropriate conversation. Their conversation is also characterised by speech production errors, fewer pronouns and conjunctions, unrelated comments and unclear links (McGrath, Hutaff-Lee, Scott, Boada, Shriberg & Pennington, 2008; Mash & Wolfe, 2016).

2.2.5.3 Medical and physical concerns

Children diagnosed with ADHD may experience several medical and physical concerns, including health-related problems (asthma, bedwetting, sleep disturbances), being accident prone, and demonstrating risk-taking behaviours (Barkley, 2014; Nigg, 2013; Mash & Wolfe, 2016).

2.2.5.4 Social and emotional difficulties

Children with ADHD may also experience social difficulties. These may include: family problems such as negativity, child noncompliance, excessive parental control, sibling conflict, maternal depression, paternal antisocial behaviour, and marital conflict; and peer problems due to the fact that children with ADHD can be bothersome, socially awkward, stubborn and insensitive. Children with ADHD often do not notice how their behaviour affects others. It may be irritating to other children when they interrupt them, go off-topic or do not filter what they say. Children with ADHD can also be extremely demanding which can lead to difficulty waiting for their turn (Mash & Wolfe, 2016; Morin, 2014; Venter, 2006). All of this can cause tension with other children as their charming and talkative persona can become tiresome once their domineering natures become clear, as well as the fact that they often require instant gratification (Venter, 2006).

Children with ADHD often have difficulty controlling their emotions and emotional reactions. When paired with such strained social relations children with ADHD may experience negative emotional responses such as mood swings, impulsivity and outbursts of anger (Mash & Wolfe, 2016; Morin, 2014). Most children diagnosed with ADHD struggle with self-esteem (Mash & Wolfe, 2016; Morin, 2014). Venter (2006) notes that they may try to conceal this with bravado or clowning about in class. He goes on to note that praise for effort can help in boosting self-esteem in children with ADHD.

2.2.6 Comorbidity

Many children diagnosed with ADHD also receive comorbid (co-occurring) psychiatric diagnoses. Moreover, comorbid disorders are more common than not in children with ADHD. Prevalence rates of 67% and 69% were reported in two large clinical European and American multisite studies (Steinhausen, Novik, Baldursson, Curatolo, Lorenzo, Rodrigues, Pereira, Ralston, & Rothenberger, 2006; Jensen & Steinhausen, 2015). The most common comorbid disorders associated with ADHD have been found to be: Oppositional Defiant Disorder (ODD), Conduct Disorder (CD) and Anxiety disorders and Mood disorders (APP, 2000; Beate, Overgaard, Aspenes, Pripp, Mordre, Aase, Reichbom-Kjenneruf, & Zeiner, 2017; Mash & Wolfe, 2002). These and more will be discussed below.

2.2.6.1 Oppositional Defiant Disorder, Conduct Disorder and Antisocial Personality Disorder

Various studies have indicated that about 40% of children with ADHD display significant ODD symptoms making it the most common comorbid condition with ADHD (Pelham & Evans, 1992, p. 290; DuPaul & Stoner, 2003, p. 6). Children with ODD are often short-tempered, argumentative and defiant. According to Beauchaine, Hinshaw, and Pang (2010) about 30-50% of children with ADHD

eventually develop CD, which is more severe than ODD. Children with CD violate societal rules and are at high risk for getting into serious trouble at school or with the law. CD is also associated with the use of illegal drugs, which may explain why children diagnosed with ADHD may have an increased risk for developing substance use problems in adolescence (APA, 2013; Mash & Wolfe, 2016; Szobot & Bukstein, 2008). Finally, ADHD is also a risk factor for the later development of antisocial personality disorder (APD). APD involves a pattern of disregard for, and violation of, the rights of others, as well as involvement in multiple illegal behaviours (APA, 2013; Mash & Wolfe, 2016; Storebo & Simonsen, 2013).

2.2.6.2 Anxiety Disorders

Manassis, Tannock, Garland, Minde, McInnes, & Clark (2007) note that about 25% of children with ADHD will experience anxiety. There are many things that children with ADHD worry about, such as taking tests, classroom interactions, social situations, being separated from their parents and trying something new. When anxieties are unrealistic, more frequent and more intense than normal, then it can have a negative effect on a child's thinking and behaviour (Mash and Wolfe, 2016). Children with co-occurring ADHD and anxiety display social and academic difficulties and experience greater long-term impairment and mental health problems than children with either of the conditions alone (Manassis et al., 2007; Mash & Wolfe, 2016).

2.2.6.3 Mood Disorders

Mash and Wolfe (2016) state that of all the young people diagnosed with ADHD, as many as 20-30% experience depression in addition to the ADHD symptoms. These children may feel sad, hopeless and overwhelmed and this can affect how they cope with everyday life (Mash & Wolfe, 2016). A

depressed mood lowers self-esteem; reduces interest and/or pleasure in favourite activities; increases irritability; and disrupts appetite, sleep and the ability to think clearly (APA, 2013; Mash & Wolfe, 2016). The risk for suicide ideation as well as self-harm is higher among children with co-occurring ADHD and depression. (Mash & Wolfe, 2016; Pliszka, 2014).

2.2.6.4 Developmental Coordination and Tic Disorders

In about 30-50% of children with ADHD, motor coordination difficulties such as clumsiness, poor performance in sports, or poor handwriting may be experienced (Fliers et al., 2010; Mash & Wolfe, 2016). Up to 50% of children with ADHD may develop a developmental coordination disorder (DCD). This condition is characterised by motor incoordination and delays in achieving motor milestones (APA, 2013; Fliers et al., 2012; Mash & Wolfe, 2016). Approximately 20% of children with ADHD also have tic disorders. Tic disorders are sudden, repetitive, motor movements or sounds such as eye blinking, throat clearing and grunting (APA, 2013; Mash & Wolfe, 2016). These children may experience more social and behavioural difficulties than those with ADHD alone (Mash & Wolfe, 2016).

2.2.7 Prevalence and Course

*When we began our studies in the 1960's no one believed such children existed;
while now people find them under every rock.*

- Dr. Leon Eisenberg, child psychiatrist and ADHD pioneer (1922-2009)

2.2.7.1 Prevalence

Attention-Deficit/Hyperactivity Disorder (ADHD) is one of the most common childhood psychiatric conditions (Antshel, 2015). In every country and culture where ADHD was studied the existence of

this disorder was identified (Barkley, 1998; Kleynhans, 2005). Studies have shown that between 5% and 10% of children and adolescents have been diagnosed with ADHD worldwide (Antshel, 2015). Based on parental report data from 2011, approximately 6.4 million children aged 4 to 17 years in the United States have a diagnosis of ADHD. This finding is consistent with other prevalence estimates of 9-11% of children, nearly two children in every classroom in the U.S. (Antai-Otong & Zimmerman, 2016; Chan, Fogler, & Hammerness, 2016; Fabiano, Schatz, Aloe, Chacko, & Chronis-Tuscano, 2015; McClain & Burks, 2015; Visser et al., 2014). In the U.S., the median age of diagnosis is seven years. About one-third of children with ADHD are diagnosed before age six years, and three-quarters before age nine years (Visser, Zablotsky, Holbrook, Danielson, & Bitsko, 2015).

Although the prevalence rate in South Africa has not yet been determined officially, it can be estimated that 8-10% of South African children experience symptoms associated with ADHD (Muthukrishna, as cited in Lloyd, Stead, & Cohen, 2006). With South Africa moving towards inclusive education and with a larger number of learners in every class, it is very likely that there is more than one learner with ADHD in every classroom (Kleynhans, 2005). Recent data indicates that boys are diagnosed three times as often as girls (Antai-Otong & Zimmerman, 2016; Mash & Wolfe, 2002; Mash & Wolfe, 2016). ADHD affects children from all social classes. However, there are slightly more children diagnosed with ADHD in lower socioeconomic status (SES) groups (Mash & Wolfe, 2016).

Research on the relationship between ADHD, race, culture and ethnicity has been inconsistent. It remains unclear whether current tools for assessing ADHD adequately capture the expression of ADHD in different groups (Mash & Wolfe, 2016).

2.2.7.2 Course and Outcome

The symptoms and presentation of ADHD change with development. A difficult temperament as an infant may be followed by hyperactive-impulsive symptoms at 3 to 4 years of age, and then by the increasing visibility of symptoms of inattention at school going age. Table 2.1 shows the course and outcome of ADHD according to Mash and Wolfe (2016, p. 248-250).

Table 2.1 Course and Outcome of ADHD

Infancy	Signs of ADHD may be present at birth; however, no valid or reliable methods exist to identify it.
Preschool	Hyperactivity-impulsivity symptoms become more visible and significant from age 3 or 4. Children that show symptoms for a full year or more are likely to continue to have difficulties in middle childhood and adolescence.
Primary School	Symptoms become much more evident when children start school. This is also when oppositional defiant behaviours may increase or develop.
Adolescence & Adulthood	Although some symptoms of ADHD may decline in prevalence and intensity as children grow older, for many individuals ADHD is a lifelong and painful disorder

Note. Mash & Wolfe (2016, p. 248-250).

2.2.8 Etiology

Contrary to popular discourses, ADHD is not the result of laziness, poor motivation, low intelligence, disobedience, poor upbringing or selfishness - to name just a few. Having ADHD doesn't exclude you from having some of these difficulties, however, they do not cause chronic inattention, hyperactivity and impulsiveness - the core symptoms of ADHD (APA, 2013).

As Pelsser, Frankena, Toorman, Rodrigues & Pereira (2017) note, the causal pathways of ADHD are largely unknown. ADHD is a multifaceted disorder and several factors may contribute to its etiology

(Thapar, Cooper, Eyre, & Langley, 2013). Figure 2.1 on page 31, shows a possible developmental pathway for ADHD that highlights several causal influences and outcomes. Genetics has a high influence on ADHD (Barlow & Durand, 2016; Mash & Wolfe, 2016; Taylor, 2012). Research has shown that ADHD is common in families in which one person has the disorder (Barlow & Durand, 2016; Fliers et al., 2009; Mash & Wolfe, 2016). It is important to note that such families show higher levels of psychopathology in general (Barlow & Durand, 2016).

Researchers have also found that multiple genes are involved when ADHD symptoms are explored (Barlow & Durand, 2016). In many research studies on ADHD, it has been found that mutations occur in which extra copies of a gene on one chromosome are created or genes are deleted (Barlow & Durand, 2016; Elia et al., 2009). To function correctly, our DNA needs matching pairs of genes on each chromosome and therefore the addition or deletion of such genes can result in disrupted development. The main neurochemical associated with attention is dopamine, although norepinephrine, serotonin and gamma-aminobutyric acid (GABA) can also be involved in the cause of ADHD. The gene DAT1 is of interest as methylphenidate (Ritalin – one of the most common medical treatments for ADHD) inhibits this gene and increases the amount of dopamine available (Barlow & Durand, 2016; Davis et al., 2007).

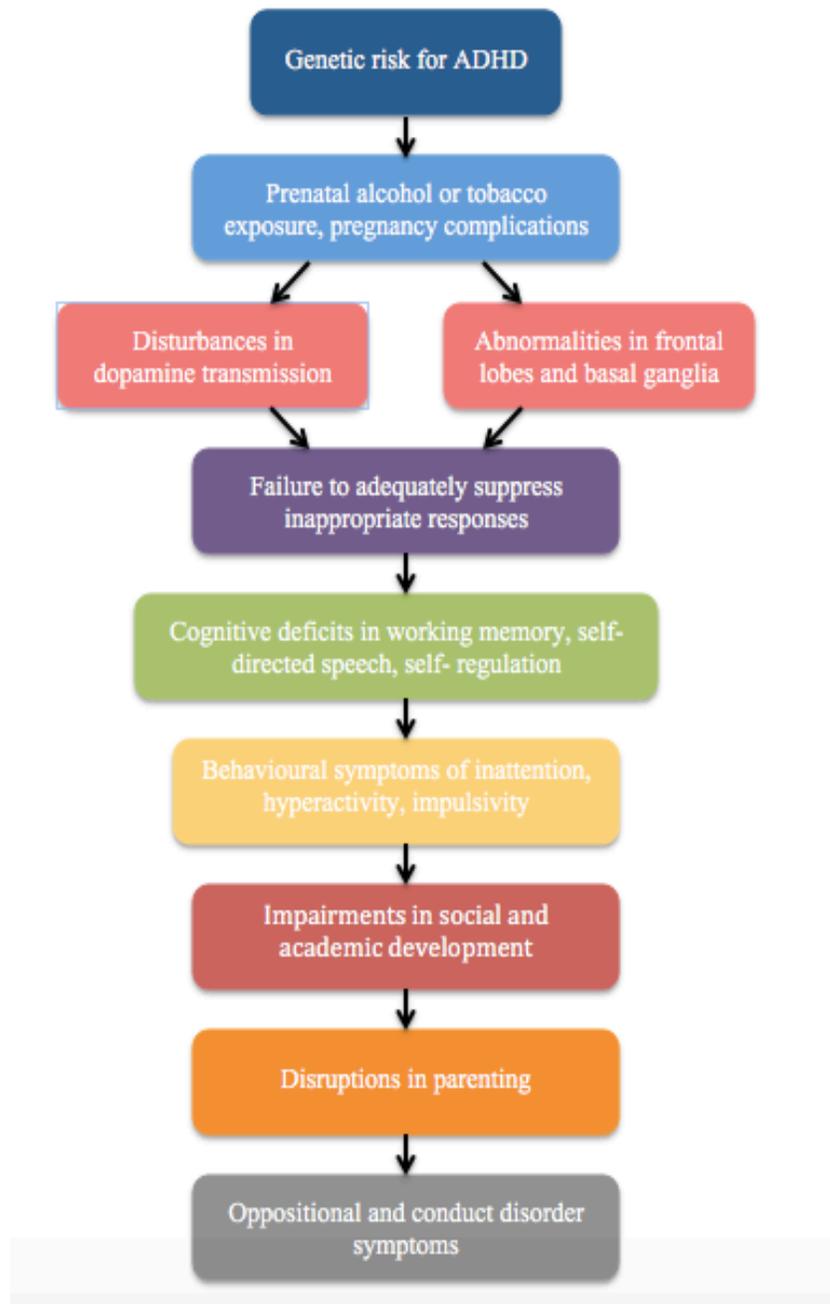


Figure 2.1. A possible developmental pathway for ADHD (Mash & Wolfe, 2016).

Researchers are looking for basic deficits, such as specific attention problems, characteristic of ADHD, and linking these deficits to specific brain dysfunctions. The primary deficits that are of current interest are the brain's attention system, working memory functions, inattentiveness, and impulsivity. The goal is to tie specific genetic defects to these cognitive processes to make the link

between genes and behaviour. Some research shows that poor inhibitory control may be common among children with ADHD as well as their unaffected family members. This may be one of the genetic markers for this disorder (Barlow & Durand, 2016; Goos, Crosbie, Payne, & Schachar, 2009).

Even though there is such a strong genetic influence, this does not completely rule out environmental factors. There is a very little scientific support that social and environmental factors cause ADHD. However, such factors could lead to a greater severity of the symptoms, contribute to its persistence (Mash & Wolfe, 2002), and contribute to the forms of comorbid disorders associated with ADHD (Franke, Neale, & Faraone, 2009; Academy of Medical Sciences, 2007; Rutter, Moffitt, & Caspi, 2006; Thapar, Cooper, Jefferies, & Stergiakouli, 2012). For example, researchers have found that children with a specific genetic mutation involving the dopamine system were more likely to lead to symptoms of ADHD (hyperactive and impulsive behaviour) if their mothers smoked during pregnancy (Barlow & Durand, 2016; Kahn, Khoury, Nichols, & Lanphear, 2003). There is also evidence that points towards other environmental factors such as maternal stress, alcohol use, and parental marital instability and discord (Barlow & Durand, 2016; Ficks & Waldman, 2009; Grizenko et al., 2012). Pregnancy complications, such as maternal alcohol consumption and low birth weight, may also play a role in increasing the chance that children with a genetic predisposition for ADHD will display the symptoms characteristic of the disorder (Barlow & Durand, 2016).

Over the years, food additives have been considered as possible causes for ADHD (Barlow & Durand, 2016). Research into the effects of food on ADHD began forty years ago. Paediatric allergist Benjamin Feingold hypothesised that both artificial food additives (colourings and flavours) and foods rich in salicylates might be 'important etiologic agents' of the hyperkinetic syndrome (Pelsser et al.,

2017; Wender, 1986; Feingold, 1975). Some research suggests that there might be a small but measurable impact of artificial food colourings and additives on the behaviour of young children (Barlow & Durand, 2016). Newer research now also points towards the fact that pesticides in foods may play a possible role in contributing to an increased risk of ADHD (Barlow & Durand, 2016).

Psychological and social dimensions of ADHD may further influence the disorder itself. Barlow and Durand (2016) note that although it may not be a direct cause of ADHD, negative responses from parents, teachers, caregivers and peers can affect the child's low self-esteem. On top of this, the school or teacher may not make necessary adaptations to the classroom or lesson plan to accommodate children diagnosed with ADHD. This could be frustrating for the child and aggravate the symptoms more. They further explained that child-headed households and families with a low socio-economic status require additional responsibilities from children. This can be viewed as a contributing factor to the development of negative side effects ADHD (Barlow & Durand, 2016).

Although there are multiple ongoing research studies into the possible causes of ADHD it is important to keep the following in mind, "the presence of an organic cause for attention deficits says nothing about the best treatment or outcome; that is, treatments such as behavioural interventions and classroom strategies will remain the same, and a positive outcome is neither precluded nor reduced by the identification of a specific medical cause" (Accardo et al., 2000, p. 10). Therefore, it seems that intrinsic or personal factors play a role in the etiology of ADHD symptoms, and that extrinsic or environmental factors may also contribute to observed behaviours. Keeping in mind that co-morbid behaviours or disorders can be present too, and the fact that the symptoms of ADHD often elicit negative feedback from the environment, it seems as though Bandura's model of reciprocal

determinism provides an appropriate model for understanding the complex difficulties that children with the diagnosis of ADHD may experience. This model may also provide a way of approaching appropriate interventions, to be discussed in the following section.

2.3 INTERVENTIONS FOR ADHD

The management of ADHD is multidisciplinary, as a single intervention is rarely effective. The primary interventions are: medical, educational, psychosocial (behaviour modification), and diet manipulation and supplements with medical and psychosocial being the most common (Venter, 2006; Subcommittee on Attention-Deficit/Hyperactivity Disorder & Management, 2011). Psychosocial treatments usually focus on broader issues such as improving academic performance, decreasing disruptive behaviour, and improving social skills. The goal of biological treatments involves reducing children's impulsivity and hyperactivity as well as improving their attention skills (Barlow & Durand, 2016; Subcommittee on Attention-Deficit/Hyperactivity Disorder & Management, 2011).

2.3.1 Psychosocial interventions

Over the years, a variety of behavioural interventions have been recommended, for home and school, to assist children who have been diagnosed with ADHD (Barlow & Durand, 2016; Fabiano et al., 2009; Ollendick & Shirk, 2010). One intervention that is used is reinforcement programs based on Behavioural approaches (Barlow & Durand, 2016; Fabiano et al., 2009). Behavioural therapy can be timeous and require considerable effort, however, has the potential to lead to improved functioning at home, at school, and socially (Ahmann, Saviet, & Tuttle, 2017; CDC, 2016). AAP (2011) defines behaviour therapy as follows: “Behaviour therapy represents a broad set of specific interventions that have a common goal of modifying the physical and social environment to alter behaviour...”.

Behavioural therapy can help children diagnosed with ADHD learn to better control their behaviour (Ahmann, Saviet, & Tuttle, 2017; CDC, 2016). As mentioned previously, although learning and practicing new behaviours require time and effort, it has lasting benefits for children (Ahmann, Saviet, & Tuttle, 2017). The CDC reported that from 2008-2011 no more than 55% of children diagnosed with ADHD received any psychological intervention (Visser et al., 2016). The CDC also suggests that more readily available evidence-based behaviour interventions are necessary (Ahmann, Saviet, & Tuttle, 2017; Visser et al., 2016).

Another intervention involves support to the parents in the form of parent education programs, which teach families how to respond to their child's behaviours constructively as well as how to structure their day in order to minimise difficulties (Barlow & Durand, 2016; Fabiano et al., 2009). Social skills training is another treatment component. This involves teaching children how to interact appropriately with their peers (Barlow & Durand, 2016; de Boo & Prins, 2007). Cognitive behavioural interventions are used for adults with ADHD and aim to reduce distractibility and improve organisational skills (Barlow & Durand, 2016).

2.3.2 Biological interventions

An estimated 4 million children in the United States are being treated with medication for symptoms of ADHD (Barlow & Durand, 2016; Centres for Disease Control and Prevention, 2013). Drugs such as methylphenidate (Ritalin, Concerta, Adderall), which are stimulant drugs; and several non-stimulant medications, such as atomoxetine (Strattera), guanfacine (Tenex), and clonidine, have proved to be helpful in reducing the core symptoms of hyperactivity and impulsivity and in improving on-task focus and concentration (Barlow & Durand, 2016; Subcommittee on Attention-

Deficit/Hyperactivity Disorder & Management, 2011). Pelsser et al., (2017), note that psychostimulants are usually the first-choice in pharmacological treatment (Bolea-Alamanac, Nutt, Adamou, Asherson, Bazire, & Coghill, 2014) and that it has shown beneficial short-term efficacy and has led to acute core symptom reduction (Charach, Ickowicz, & Schachar, 2004; van de Loo-Neus, Rommelse, & Buitelaar, 2011) in approximately 65–80% of children (Pelsser et al., 2017). Barlow and Durand (2016), however, note that not all children respond to medication and most children who do respond only show improvement in their ability to focus their attention and not in the critical areas of academics and social skills. Pelsser et al. (2017) also note that children taking psychostimulants may still meet the ADHD-criteria (Riddle, Yershova, Lazzaretto, Paykina, Yenokyan, Greenhill, et al., 2013) and complete normalization of behaviour is rare (Shaw, Hodgkins, Caci, Young, Kahle, Woods, et al, 2012; Sonuga-Barke, Brandeis, Cortese, Daley, Ferrin, Holtmann, et al, 2013; Sonuga-Barke, Brandeis, Cortese, Daley, Ferrin, Holtmann, et al, 2012; Molina, Hinshaw, Swanson, Arnold, Vitiello, Jensen, et al, 2009). However, further research into medication is an ongoing process.

In addition to this medication can also result in side effects such as insomnia, drowsiness and irritability (Barlow & Durand, 2016; Kollins, 2008; Sonuga-Barke, Koerting, Smith, McCann, & Thompson, 2011). Furthermore, Pelsser et al. (2017) note that medication non-adherence occurs frequently and 30 to 50% of subjects stop taking medication within 12 months and 66-80% within three years. In sum, better treatments preferentially aimed at prevention of ADHD in young children and at targeting the underlying causes are needed (Pelsser et al., 2017).

2.4 RATIONALE FOR ALTERNATIVE INTERVENTIONS

Theory, which has informed the research topic, is Albert Bandura's Social Cognitive Theory, and more specifically his model of reciprocal determination (Bandura, 1999). Bandura uses his model of reciprocal determinism to explain how an individual's behaviour both influences and is influenced by personal characteristics and traits as well as the social environment (Bandura, 1999). The model involves three components, personal, behavioural, and environmental factors that interact and influence each other reciprocally. These three factors are interdependent (Bandura, 1999). Personal factors include beliefs, attitudes and biological factors (including genetic factors) of the individual. Neurological processes would also be included as part of the personal component of the triad. The behavioural factors consist of responses to stimuli. These responses can be experienced by others as either negative or positive. Environmental factors would include the roles played by and communications from parents, teachers and peers as well as the physical environment including the school system. All three groups of factors can influence and determine an individual's behaviour and self-belief (Bandura, 1999).

The uses of pharmacological and behavioural methods for treating ADHD do not fully consider all the above-mentioned factors, as they often do not take personal characteristics and the social environment of the child into consideration. Although these methods of pharmacology and behavioural modification are successful in many cases and present the most evidence-based interventions, the researcher found that there was an additional need for alternative intervention plans or at least complementary approaches to optimally support children who have been diagnosed with ADHD in a more holistic way.

2.5 THEORETICAL FOUNDATION OF PLAY IN CHILD DEVELOPMENT

You see a child play and it is so close to seeing an artist paint, for in play a child says things without uttering a word. You can see how he solves his problems. You can also see what's wrong. Young children, especially, have enormous creativity, and whatever's in them rises to the surface in free play.

- Erik Erikson

Various play theorists such as Vygotsky, Piaget, and Winnicott argued the importance of play in child development. They stressed that through play, children learn about their environment, develop social skills, and play out their wishes and desires. Through play, children develop cognitive abilities, social skills, motor skills, and language (Brodin, 2005; Swan, 2011; Wadsworth, 1986). Landreth (2002) notes that through the process of play, children can make sense of their environment as well as their experiences while they uncover their sense of self.

Piaget was a pioneer theorist on the role of play in child development. According to him, higher order cognitive development is formed through three primary stages of play (Swan, 2011; Wadsworth, 1986). Piaget argued that through the first year of life, children engage in practice play characterised by the absence of goal-directed actions, pretence, or symbolism (Wadsworth, 1986). Children's engagement in practice play thereby represents control over objects and the pleasure of being in control (Schaefer, 1993; Swan, 2011; Glover & Landreth, as cited in O'Connor, Schaefer & Braverman, 2016). Between the ages of fifteen and twenty-four months, children perform constructive play by combining sensorimotor actions and grouping objects together. During their second year of life, they begin to mentally represent their worlds through symbolic play (Schaefer, 1993; Swan,

2011). During this stage of play development, which runs from age two to seven, children utilise their cognitive ability to assimilate their experiences and engage in make-believe or pretend play (Schaefer, 1993; Swan, 2011; Glover & Landreth, as cited in O'Connor et al., 2016). This is the assimilative process that play therapy is based on (Landreth, 2002; Schaefer, 1993; Swan, 2011, Wilson & Ryan, 2005; Glover & Landreth, as cited in O'Connor et al., 2016).

2.6 PLAY THERAPY

In their book Reddy, Files-Hall and Schaefer (2005) note that play is a universal behaviour of children which has been documented since ancient times (Janssen & Janssen, 1996; Lowenfeld, 1939). They go on to say that it is estimated that by six years of age, it is likely that children have engaged in more than 15,000 hours of play (Schaefer, 1993). They also note that the benefits of play for healthy cognitive development (Bornstein & O'Reilly, 1993; Piaget, 1962), language development (Lyytinen, Poikkeus, & Laakso, 1997; McCune, 1995; Tamis-LeMonda & Bornstein, 1994), social competence (Howes & Matheson, 1992; Parten, 1932), and physical development (Pellegrini & Smith, 1998) have been well established (Reddy, Files-Hall & Schaefer, 2005). Reddy, Files-Hall and Schaefer (2005) go on to say that play has the power to aid in child development and help alleviate emotional and behavioural difficulties.

For over six decades, play therapy has been recognised as the oldest and most popular form of child therapy in clinical practice (Association for Play Therapy, 2001; Parten, 1932; Reddy, Files-Hall & Schaefer, 2005). The Association for Play Therapy (2001) describes the process of play therapy as:

The systematic use of a theoretical model to establish an interpersonal process wherein trained play therapists use the therapeutic powers of play to help clients prevent or resolve psychosocial difficulties and achieve optimal growth and development (p. 20).

As Schaefer (1993) argues, play therapy provides a unique environment in which children can engage in self-expression, gain a sense of control, and increase awareness of their feelings, thoughts, and desires (Landreth, 2002; Schaefer, 1993; Swan, 2011; Glover & Landreth, as cited in O'Connor et al., 2016).

2.6.1 Child-Centered Play Therapy

Child-Centered Play Therapy (CCPT) is an approach that allows for non-directive therapeutic sessions between the child and therapist. Virginia Axline, who drew upon the work of Carl Rogers, developed non-directive play therapy, or CCPT as it is currently referred to. It is based on Rogers' person-centered approach which assumes that given the ideal circumstances of empathy, authenticity on the side of the therapist and unconditional positive regard, a person's natural tendency towards self-actualisation will be able to unfold (Rogers, 1956).

In CCPT, the therapist follows Virginia Axline's basic principles of developing a caring relationship: being non-judgmental, providing a safe environment, being sensitive to feelings, allowing the child to solve personal problems, trusting the child's inner direction, appreciating the gradual nature of the process, and establishing only necessary therapeutic limits that help improve the relationship (1947, p. 73-74). The child leads the session and the therapist follows his or her lead through reflection of

content, feeling, and behaviour (Landreth, 2012, p. 73-82). During CCPT sessions, children learn to discover their inner strengths and become more self-accepting, self-reliant, and self-directing. Child clients are granted opportunities to make decisions, to direct their behaviour, and thereby experience a sense of agency and responsibility, which allows for developing a stronger sense of self, self-esteem, and confidence. The nature of the CCPT process, which allows for unconditional positive regard, authenticity on the side of the therapist and an empathic understanding by the therapist, with only a few limits set in place, create the space where the clients can learn to take risks and accept responsibility for their behaviour. The aim of this intervention is to provide a validating environment to the child diagnosed with ADHD, as opposed to what he or she experiences in regular life situations.

2.6.2 Efficacy of Child-Centered Play Therapy

There has been a considerable amount of research into whether CCPT is an effective approach for treating children with social, emotional, and behavioural problems. Play therapy has been shown to improve children's self-concepts (Baggerly, 2004; Post, 1999; Swan 2011), external behavioural functioning (Kot, Landreth, & Giorodona, 1998; Swan, 2011), and language development (Fall, Navelski, & Welch, 2002; Danger & Landreth, 2005; Packman & Bratton, 2003; Swan, 2011). Several studies also indicated that play therapy reduces symptoms of stress in parent-child and teacher-student relationships (Ray, 2007; Ray, Henson, Schottelkorb, Garofano Brown, & Muro; 2008; Swan, 2011).

Swan (2011) notes that to understand the overall treatment effectiveness of play therapy better, LeBlanc and Ritchie (2001) piloted a meta-analysis of 42 play therapy studies. The researchers found a medium effect size of .66 standard deviations. This led the researchers to conclude that children in play therapy intervention groups demonstrated 25% more improvement on outcome measures when

compared to non-play therapy treatment groups. Swan (2011) also points out that Bratton, Ray, Rhine and Jones (2005) also did a meta-analytic study and reviewed results from 93 play therapy outcome studies published from 1953 to 2000. The researchers found a large effect size (.80) for play therapy treatments. Bratton et al. (2005) also found through their examination of outcome differences between humanistic and non-humanistic approaches to play therapy that the mean effect size for humanistic treatments was significantly higher than non-humanistic interventions. These results indicate that play therapy is an effective intervention for children with behavioural, social and emotional difficulties.

2.6.3 Response to Criticism of Play Therapy

Although play therapy has been shown to be successful, several critics have worked to undermine the use of play therapy as an accepted medium for helping children. Ray, Bratton, Rhine and Jones (2001) discuss and respond to this criticism. They note that critics work to show the ineffectiveness of play therapy as well as support the use of other interventions.

Lebo (1953) was one of the first to criticise play therapy. He challenged that play therapy was backed by cheerful and often persuasive language but not by sound scientific research. Lebo's criticisms were written early in play therapy research, and much more were to follow. Levitt (1957, 1963, 1971) did not specifically address play therapy, but over several research studies claimed that evidence did not demonstrate the effectiveness of any psychotherapy approach with children. As the years passed, the research base for play therapy expanded, especially during the 1970s. Despite increased research efforts, Phillips (1985) reviewed only a handful of research studies and concluded that there were more non-significant than significant effects for play therapy. Weisz, Weiss, Alicke, and Klotz (1987) and Weisz, Weiss, Han, Granger, and Morton (1995) offered the most accepted research to date on

psychotherapy with children. From these two meta-analytic studies, which included only a few play therapy studies, Weisz and colleagues concluded the superiority of behavioural therapeutic interventions for children over non-behavioural approaches. Also, several smaller, less significant studies found that play therapy is ineffective. For example, Reade, Hunter, and McMillan (1999) reported that there was insufficient evidence to support the practice of play therapy with children who have experienced damaging close relationships. Finally, there are those critics who operate from pure speculation and lack of any research base. To discredit play therapy, an international website sponsored by Cambridge Center for Behavioural Studies (2001) claimed, "Play therapy is both time consuming and ineffective," adding "It can have potentially disastrous consequences above and beyond the delay caused by years of ineffective treatment."

In response to these criticisms, Ray et al. (2001) did a meta-analysis of 94 research studies focusing on the efficacy of play therapy. Their findings revealed that play therapy is an effective intervention in child psychotherapy. They noted that play therapy appears to bring about effective change in various settings, across modalities, age and gender, clinical and nonclinical populations, and theoretical schools of thought (Ray, et al., 2001).

2.7 CONCLUSION

Chapter 2 aimed at providing the reader with the necessary background information about ADHD and CCPT. It showed that ADHD is a complex disorder with many possible side effects, which may exacerbate negative experiences that children diagnosed with ADHD have. There are also many possible contributing causes and treatments. It further made the case that there is room for an intervention that targets the social, emotional and behavioural difficulties that often accompany the

diagnosis of ADHD. As mentioned previously, CCPT has been offered as an effective approach for treating children with a variety of social, emotional, and behavioural problems. The researcher hopes that this will also be the case for children who have been diagnosed with ADHD. The added hope is that interventions including CCPT can play a role in balancing the personal, behavioural and environmental factors in a child's life, as according to Bandura's model of reciprocal determinism.

In Chapter 3, the research paradigm, methodology and design will be explained. The research process as it unfolded, data verification and ethical considerations will be presented.

CHAPTER 3

RESEARCH METHODOLOGY AND PROCESS

3.1 INTRODUCTION

This chapter is dedicated to describing the research process and methodology that is used in this study. The quantitative nature of the study is explained by referring to the nature of research paradigm and the research design. The research methods, such as the selection of subjects, methods of data collection and the data analysis, will also be covered.

3.2 RESEARCH PARADIGM

A paradigm is “a ‘basic set of beliefs that guides action’” (Guba, 1990 in Denzin & Lincoln, 2011). The paradigm that is guiding the action for this study is post-positivism. Post-positivism refers to thinking that came after positivism, challenging the traditional notion of absolute truth of knowledge and recognising that we cannot be “positive” about our claims of knowledge when studying human behaviour (Phillips & Burbules, 2000; Creswell, 2014). According to Phillips and Burbules in Creswell (2014), post-positivism has the following fundamental assumptions:

- (a) Knowledge is conjectural and an absolute truth can never be found. Therefore, research findings are always imperfect;
- (b) research is the process of making claims and then refining or abandoning these claims for other claims that are more strongly warranted;
- (c) data, evidence, and rational considerations shape knowledge. In practice, the researcher collects information on instruments based on measures completed by participants or by observations recorded by the researcher;
- (d) research seeks to develop relevant true

statements, ones that can serve to explain the situation that is of concern or that describes the causal relationships of interest; and (e) being objective is an essential aspect of competent inquiry, and for this reason researchers must examine methods and conclusions for bias (p. 7-8).

When examining these principles, it is clear that the post-positivist paradigm relates to this research study in the following ways: (a) the researcher will not be able to find an absolute truth and hypotheses might not be proven, instead, a failure to reject the hypothesis could be indicated; (b) this research begins with the test of whether CCPT is effective as an intervention for children who have been diagnosed with ADHD; (c) information will be collected via the use of an instrument that has been completed by the parents and teachers of the subjects; (d) research questions and research hypotheses have been formulated to describe the causal relationship at hand; and (e) the researcher will take an objective stance throughout the research process. The process of conducting research links to the researcher's theoretical framework, as well as the research paradigm. These two components of research determine what is to be researched, how it will be researched, as well as the way the data will be analysed and interpreted (Megaw, 2011). The following section will examine the research process.

3.3 RESEARCH METHODOLOGY

Within the post-positivist paradigm, this study will follow a quantitative methodology of inquiry. Aliaga and Gunderson (2000), note that quantitative research consists of "explaining phenomena by collecting numerical data that is analysed using mathematically based methods (in particular statistics)". The first element, explaining phenomena, is a key element of all research, be it quantitative or qualitative. The explicitness of quantitative research lies in the next part of the definition. In

quantitative research, we collect numerical data. Quantitative research is ultimately about collecting numerical data to explain a phenomenon; specific questions seem immediately more suited to being answered using quantitative methods. Data that does not naturally appear in the quantitative form can however also be collected quantitatively. This is done by designing research instruments aimed specifically at converting phenomena that don't naturally exist in quantitative form into quantitative data. This data can then be analysed statistically. This increases the number of phenomena that can be studied and makes quantitative methods more flexible. The final part of the definition refers to the use of mathematically based methods, namely statistics, to analyse the data (Muijs, 2010).

Quantitative research methodologies are particularly suited to finding answers to certain research questions. One of these is a question that involves the testing of hypotheses. This involves the need to explain a relationship between two variables. As this study aims to gather quantitative data (using a measurement instrument) that will provide insight into the relationship between CCPT as an intervention and the behaviour and emotion of children diagnosed with ADHD, a quantitative research design is well suited.

3.4 RESEARCH DESIGN

According to Durrheim (2006), the research design can be described as a strategic framework for action that serves to bridge the gap between research questions and the execution or implementation of a research process. Durrheim (2006) suggests four principles that can be applied to achieve this design coherence; namely, the purpose of the research, the context in which it takes place, the research paradigm, and the techniques used.

The research design that will be used is an experimental design. There are three major types of experimental designs, namely pre-experimental, quasi-experimental and true experimental. For this study, a quasi-experimental design will be used, specifically a time series design. Time series designs involve having only one sample but taking measurements of the dependent variable on three or more occasions. Multiple data collection/observation points are required for time series studies to work well (Breakwell, Smith & Wright, 2012). In this study, the data will be collected over eight time points (as seen in figure 3.1) by the teachers and over four time points by the parents of the subjects.

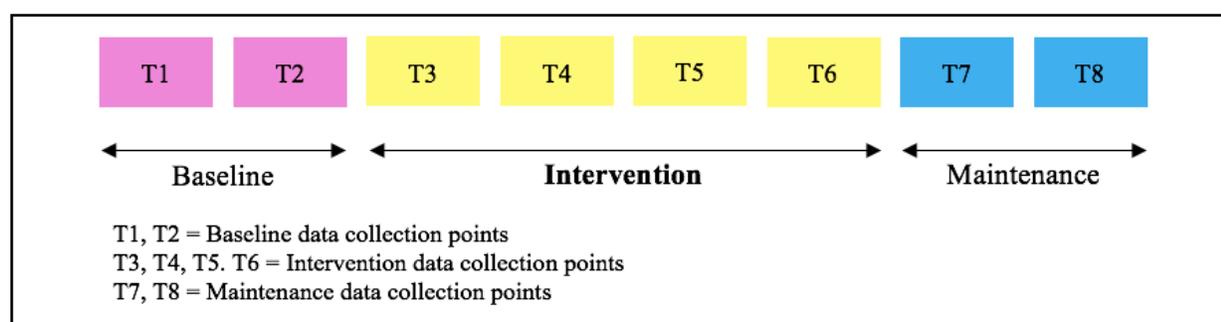


Figure 3.1. Time series design as used in this paper.

3.5 RESEARCH METHODS

The research methods used were selected due to their coherence with the research design and questions. These methods include purposeful sampling techniques, pre-, during and post-intervention quantitative data collection by using the Vanderbilt ADHD Rating Scales (VADRS), pre-, during and post-intervention, and subsequent quantitative data analysis. These will now be briefly discussed.

3.5.1 Selection of Subjects

Sampling refers to the action undertaken by the researcher to identify a population of interest, or unit of analysis, that becomes the focus of the study (Strydom, 2011).

For this study, it was decided to use purposeful sampling, a strategy that is non-probabilistic in nature. It can be described as a decision-making process that facilitates the identification and selection of relevant sources so that valuable data can be collected to provide insight into the focus of the study and that might provide answers to the research questions. This process is usually based on theoretical reasons, and the intent that the sources identified will help the researcher to access new information and knowledge (Merriam & Tisdell, 2016; Durrheim, 2006; Strydom, 2011). To identify such cases to participate in the study, criteria need to be set to assist in selecting the sample. This is referred to as criterion-based selection, and as the term suggests, a list of criteria according to which the sample is decided upon (Merriam & Tisdell, 2016; Strydom, 2011).

The target population included children formally diagnosed with ADHD, attending a school for children with physical and learning difficulties in the Western Cape. A group of children aged between eight and ten years was selected. This age group was selected on a recommendation from the school educational psychologist. Permission to conduct research in the school was granted by the Western Cape Education Department (see Appendix B). Information about the study was presented to the school educational psychologists, and principal and permission was granted by the principal (Appendix C). After that, the researcher applied for ethical clearance from the Research in Ethics Committee (REC) of Stellenbosch University. The REC granted permission to conduct the study (Appendix A).

All children aged eight to ten attending the school constituted the population for the study. The purposeful sample was selected from this population through assistance from the educational psychologists. The sample was made up of 20 children who had been diagnosed with ADHD before

this study. As all the children who attend the school have a primary diagnosis that is not ADHD, ADHD will be the secondary diagnosis. To control for variables that could affect the results, all children chosen for the sample had the primary diagnosis of a Specific Learning Disability (SLD) as well as a secondary diagnosis of ADHD.

A letter detailing the rationale of the study, as well as information regarding permission to participate, was sent home with the invited subjects identified, for parental or guardian consent. Parents of the child as well as the child needed to consent to the study to participate in it. Of the original 20 children who were asked to participate, only five children gave consent and this made up the purposeful sample of the study. The consent forms were discussed with the participants and their parents, in depth, and consequently completed. Copies of the consent forms are attached as Addenda D and E.

3.5.2 Methods of Data Collection and Analysis

There are various methods of data collection and analysis in quantitative research. The specific methods that have been chosen for this study will be discussed below.

3.5.2.1 Data Collection

A quasi-experimental research design, specifically a time point design, was used to investigate the effect of CCPT on learners with ADHD.

The method for data collection, which was identified as being most relevant and likely to lend itself to finding useful data in this study, is the Vanderbilt ADHD Rating Scales (VADRS) for children aged 6 to 12 years. This rating scale is available in the public domain, on the internet, has no copyright

requirements attached to it, and is popularly used by medical and psychological professionals for diagnostic purposes. The VADRS includes versions specific for parents and teachers, namely the Vanderbilt Teacher Rating Scale (VADTRS) and the Vanderbilt Parent Rating Scale (VADPRS). (Wolraich, Bard, Neas, Doffing, & Beck, 2013a; Wolraich, Bard, Neas, Doffing, & Beck, 2013b). The VADRS can be used to systematically obtain objective behavioural information from parents and teachers to monitor changes in behaviour and signs or symptoms associated with ADHD, and inform appropriate treatment decisions. The VADRS can be completed in less than ten minutes, making it ideal to quickly gather information on a routine basis (Wolraich et al., 2013a).

During the baseline phase, the classroom teacher and parents observed subjects' during school hours and at home. At the end of each week, the observers rated each subject using the Vanderbilt Teacher Rating Scale (VADTRS) and the Vanderbilt Parent Rating Scale (VADPRS). Baseline data was collected once a week over a two-week period. Once baseline patterns were established, 30-minute individual CCPT sessions with the subjects were introduced twice per week. The therapy sessions were conducted by a registered educational psychology intern, under the supervision of two registered educational psychologists. The educational psychologists also acted as mediators between the researcher and the participants and their parents.

To make the process as easy as possible for the parents of the subjects, during the intervention phase of the study, only the teachers continued to observe the subjects, filling in the VADTRS once a week. Intervention data was collected once a week over a four-week period. Following the intervention phase, subjects entered the non-intervention maintenance phase. During the maintenance phase, the classroom teacher and parents once again observed subjects respectively during school hours and at

home. At the end of each week, the observers rated each subject using the VADTRS and VADPRS. Maintenance data was collected with the VADRS, once a week over a two-week period. The intervention took place during the third term of 2016.

3.5.2.2 Validity and reliability of the data

For this study, the VADRS was used as a screening instrument and not as a diagnostic instrument as the diagnosis of ADHD had already been made prior to the use of the VADRS. Using tests or instruments that are valid and reliable is a crucial component of research quality. Reliability and validity coefficients range from 0.00 to 1.00, with higher coefficients indicating higher levels of reliability (Kimberlin & Winterstein, 2008, p. 2277). In recent clinical studies the VADRS have been found to be reliable and well validated (Wolraich et al., 2013a; Wolraich et al., 2013b). With regards to the VADPRS, the following was found by Wolraich et al. (2013a):

A 4-factor model (inattention, hyperactivity, conduct/oppositional problems, and anxiety/depression problems) fit the data well once discarding conduct items that were infrequently endorsed. The estimates of coefficient alpha ranged from .91 to .94 and the analogous KR20 coefficient for a binary item version of the scale ranged from .88 to .91. Test-retest reliability exceeded .80 for all summed scale scores. The VADPRS produced a sensitivity of .80, specificity of .75, positive predictive value of .19, and negative predictive value of .98 when predicting an attention-deficit hyperactivity disorder (ADHD) case definition that combined teacher's Vanderbilt ADHD Diagnostic Teacher Rating Scale and parent diagnostic interview responses. *Conclusion:* The confirmation of the construct and

concurrent criterion validities found in this study further support the utility of the VADPRS as a diagnostic rating scale for ADHD.

With regards to the VADTRS, the following was found by Wolraich et al. (2013b):

A 4-factor model (inattention, hyperactivity, conduct/oppositional problems, and anxiety/depression problems) fit the data well. The estimates of the KR20 coefficient for a binary item version of the scale ranged from .85 to .94. Convergent validity with the SDQ was high (Pearson's correlations $> .72$) for these 4 factors. For predictive validity, the VADTRS produced a sensitivity of .69, specificity of .84, positive predictive value of .32, and negative predictive value of .96 when predicting future case definitions among children whose parents completed a diagnostic interview. *Conclusion:* The confirmation of the construct and convergent validity and acceptable scale reliabilities found in this study further supports the utility of the VADTRS as a diagnostic rating scale for attention-deficit hyperactivity disorder. The low predictive validity further demonstrates the need for multiple observers in establishing the diagnosis.

The above findings indicate that the VADRS is both reliable and valid. As the VADTRS has a low predictive validity when used in isolation, it will be used in conjunction with the VADPRS for this study. It is important to note that the norms for the scales are based on a national standardisation sample representative of the U.S population. As this study is based in South Africa, all results will be interpreted with this in mind.

3.5.3.3 Data Analysis

For this research study, a mixed model of a repeated measures analysis of variance (ANOVA) has been used to test for possible effects of the intervention. In this model, the subjects were treated as the random effect, with group and time as fixed effects. Specifically, the group by time interaction effect was investigated. Post hoc tests were conducted using Fisher Least Significant Difference (LSD) testing. Means and standard deviations will be reported. A 5% significance level was used as a guideline for significant results.

3.6 ETHICAL CONSIDERATIONS

As stated by Horn, Graham, Prozesky and Theron (2015), all research involving human subjects must comply with ethical principles. The specific principles, as well as how they were adhered to in this study, are as follows:

- *Research must be relevant to the needs and interests of the community in which the research is conducted:* The research conducted on the effectiveness of CCPT on the behaviour and emotions of children diagnosed with ADHD, is relevant to the needs and interests of the community in which it is being conducted. This community is a school in the Western Cape for children who have been diagnosed with physical (neurological) and/or learning difficulties or disabilities. The findings of the research could aid in the future development of interventions for children diagnosed with ADHD in addition, who attend the school.
- *Research must have a valid scientific methodology:* The valid scientific methodology of quantitative research was utilised. The study was embedded in the theoretical framework of social-cognitive theory as espoused by Bandura (1986) in Schunk (2004) and Rogers' person-

centered approach to psychotherapy (1951) as applied to children in the form of CCPT (Axline, 1989).

- *Research subjects must be well informed about the purpose of the research and how the research results will be disseminated:* An information sheet for the study was given to participating children and their parents. This information sheet included all relevant information surrounding what the study is about, what exactly will take place and how research results will be distributed. See Appendix E.
- *Research subjects must have consented to participate:* Parents of the subjects signed an informed consent form. The subjects, children aged 8 to 10 were given an informed assent form for the study. A child only took part in the study if both the consent and assent forms were signed. Parents were, as in the consent form, directed to the supervising educational psychologists at the school for feedback regarding the therapeutic sessions while in process.
- *One must ensure that research subjects' rights to privacy and confidentiality are protected:* All therapy sessions were conducted in the play therapy room at a school for children with physical and learning difficulties in the Western Cape. No one other than the therapist, supervisor, and child were involved in the therapy. Pseudonyms were given to all individuals involved. These pseudonyms were used on all Vanderbilt ADHD Diagnostic Rating Scale (VADRS) forms as well as in this research thesis. This ensured that the subjects, parents and teachers remained anonymous. Although no documents will contain the actual names of individual involved, steps were taken to make sure they were not accessible to the public. All electronic documents were kept in a password-protected file and all hard copies were kept in a locked cabinet.

- *The fair selection of research subjects must be ensured:* The selection of subjects was made collaboratively through purposeful sampling by the researcher and educational psychologists based at the school. Although this means there were children with the diagnosis of ADHD in the population that were not receiving the same intervention, this was accounted for. The school has in-house educational psychologists on the staff, who are available to the children on a continuous basis. All children who have been diagnosed with ADHD were already on intervention plans, although it did not necessarily include CCPT. No child was therefore left without any support during the intervention.
- *The benefits of research must outweigh the risks:* The researcher holds the belief that the benefits of the study outweigh the risks. All children in the study have already been diagnosed with ADHD. Therefore, the intervention simply added to their already existing intervention plans. This eliminated the possibility of needing to diagnose a child during the intervention or after the intervention. All children in the study were on medication for ADHD for the duration of the study. Therefore, should the CCPT intervention appear to have been effective, it cannot be attributed to the child going on medication during the study. An intern educational psychologist, based at the school, who had been trained in and had experience in CCPT, conducted all the therapeutic sessions. The intern was under the supervision of the two senior-registered educational psychologists based at the school. Should a child have reacted negatively to the intervention, there were steps in place to appropriately deal with the situation. The therapist, supervising educational psychologists, relevant teachers and parents were asked to look out for out of the ordinary negative symptoms during and after the intervention. Teachers and parents were provided with a list of signs they should look out for (see Appendix H). Should the intervention have caused a negative reaction in any way, one of the educational

psychologists would have stepped in and provided the support needed for the child and family affected. The educational psychologists based at the school were also available to provide further follow-up therapy sessions if needed be. The researcher conducted follow-up checks on all the subjects' well-being with the therapist and the two educational psychologists at the school for three months after the interventions were concluded.

- *Thorough care must be taken to ensure that research in communities is effectively coordinated and does not place unwarranted burden on such communities:* This was achieved through various methods. Permission to do the study was acquired from the WCED. Permission to do the study was also acquired from the principal and the resident educational psychologists at the school. Also, information on the study, and what was required of them, was made available to the teachers of children selected to participate in the study.

Upholding these principles as mentioned above ensured that the research conducted was ethically sound.

3.7 CONCLUSION

For a study to be classified as quantitative research, researchers need to keep a distant relationship between themselves and the respondents, remaining objective at all times (Maree, 2016). Furthermore, in quantitative research, the focus is placed on gathering facts by collecting data that is numerically based and which is open to analytical methods (Walliman, 2006). In this chapter, the quantitative nature of the study was explained and discussed. The results of the study will now be discussed in Chapter 4, which will be followed by an interpretation of the results against the relevant literature in Chapter 5.

CHAPTER 4

QUANTITATIVE ANALYSIS AND RESULTS

4.1 INTRODUCTION

This chapter is dedicated to the presentation and interpretation of the research results. It includes a brief outline of the scoring and data processing procedures that were followed in the study and is primarily dedicated to the statistical analysis of these results. The data relating to the five subjects was collected over eight points in time with teachers, and four points in time with parents. The results from both teachers and parents are discussed separately as well as together. Graphs will be used to explain the research results in this chapter.

To orientate the reader, the research hypotheses used to direct the study are, once again, stated below:

H₀: An intervention of CCPT has no effect on the behaviour, emotion and academic performance of children diagnosed with ADHD.

H₁: An intervention of CCPT has an effect on the behaviour, emotion and academic performance of children diagnosed with ADHD

In the case of this study, the alternative hypothesis is directional and presumes that the intervention of CCPT can have a positive effect on the behaviour, emotion and academic performance of children diagnosed with ADHD. The results from the data collection over various time points were statistically analysed to determine whether an intervention of CCPT can influence the behaviour, emotion and academic performance of children diagnosed with ADHD. Next, the scoring procedures of the VADRS and how the data was processed will be discussed.

4.2 SCORING PROCESS OF THE VADRS

Standard procedures for scoring the VADRS were followed. The VADTRS contains 43 items. Items 1–9 deal with inattention and need to be scored by tallying the amount of “often” and “very often” responses. Items 10-18 look at hyperactivity and impulsivity and need to be scored by tallying the amount of “often” and “very often” responses. Items 1-18 are then looked at together to get an idea of combined inattention and hyperactivity. This is done by adding all responses (0, 1, 2, or 3) from each question together. Items 19-28 deal with defiance and need to be scored by tallying the amount of “often” and “very often” responses. Items 29-35 look at levels of anxiety and depression and need to be scored by tallying the amount of “often” and “very often” responses. Lastly, items 36-43 look at academic performance and behaviour and need to be scored by tallying the amount of “somewhat of a problem” and “problematic” responses.

The VADPRS also contains 55 items and is scored similarly. However, the numbering differs slightly. Items 1–9 deal with inattention and need to be scored by tallying the amount of "often" and "very often" responses. Items 10-18 look at hyperactivity and impulsivity and need to be scored by tallying the amount of "often" and "very often" responses. Items 1-18 are then looked at together, to get an idea of combined inattention and hyperactivity. This is done by adding all responses (0, 1, 2, or 3) from each question together. Items 19-40 deal with defiance and need to be scored by tallying the amount of "often" and "very often" responses. Items 41-47 look at levels of anxiety and depression and need to be scored by tallying the amount of "often" and "very often" responses. Lastly, Items 48-55 look at academic performance and behaviour and need to be scored by tallying the amount of “somewhat of a problem” and “problematic” responses.

After the scoring process had been undertaken by the researcher, the VADTRS and VADPRS data was processed by summarising and organising the data in table format (refer to Appendix I). The data summaries contain two tables for each subject: one for the teacher responses and one for the parent responses. Both tables indicate the respondents' scores during the baseline, intervention and maintenance phases of the study. The results will be discussed below.

4.3 STATISTICAL ANALYSIS AND INTERPRETATION OF THE DATA

For comparison of mean scores between all the time points, a mixed model repeated measures ANOVA was used with "time" as the fixed effect and the subjects as the random effect. Post hoc testing was done using Fisher least significant difference (LSD) testing.

For this study, the variables are summarised one at a time by considering the teacher's responses on the various scales of the VADTRS over eight time points, the parents' responses on the VADPRS over four time points, as well as the teachers' and parents' combined responses over four time points. Frequency distributions are presented in the form of time series graphs. The vertical axis represents the mean data values while the horizontal axis shows time.

4.3.1 Teacher responses

Subjects' behaviour, emotion and academic performance in the classroom were assessed by their teachers through repeated measurement over eight weeks. Subjects' teachers were instructed to rate their behaviour, emotion and academic performance once a week at the end of a school day for the entire duration of the study. The section below displays the average scores for the various subscales across baseline, intervention and maintenance conditions. Subjects participated in two weeks of non-

intervention baseline, four weeks of CCPT on two days per week, and two weeks of non-intervention maintenance. Figure 4.1 (a) - (f) graphically represents the teachers' responses during the baseline, intervention and maintenance phases of the study. The results on the various scales of the VADTRS can be summarised as follows:

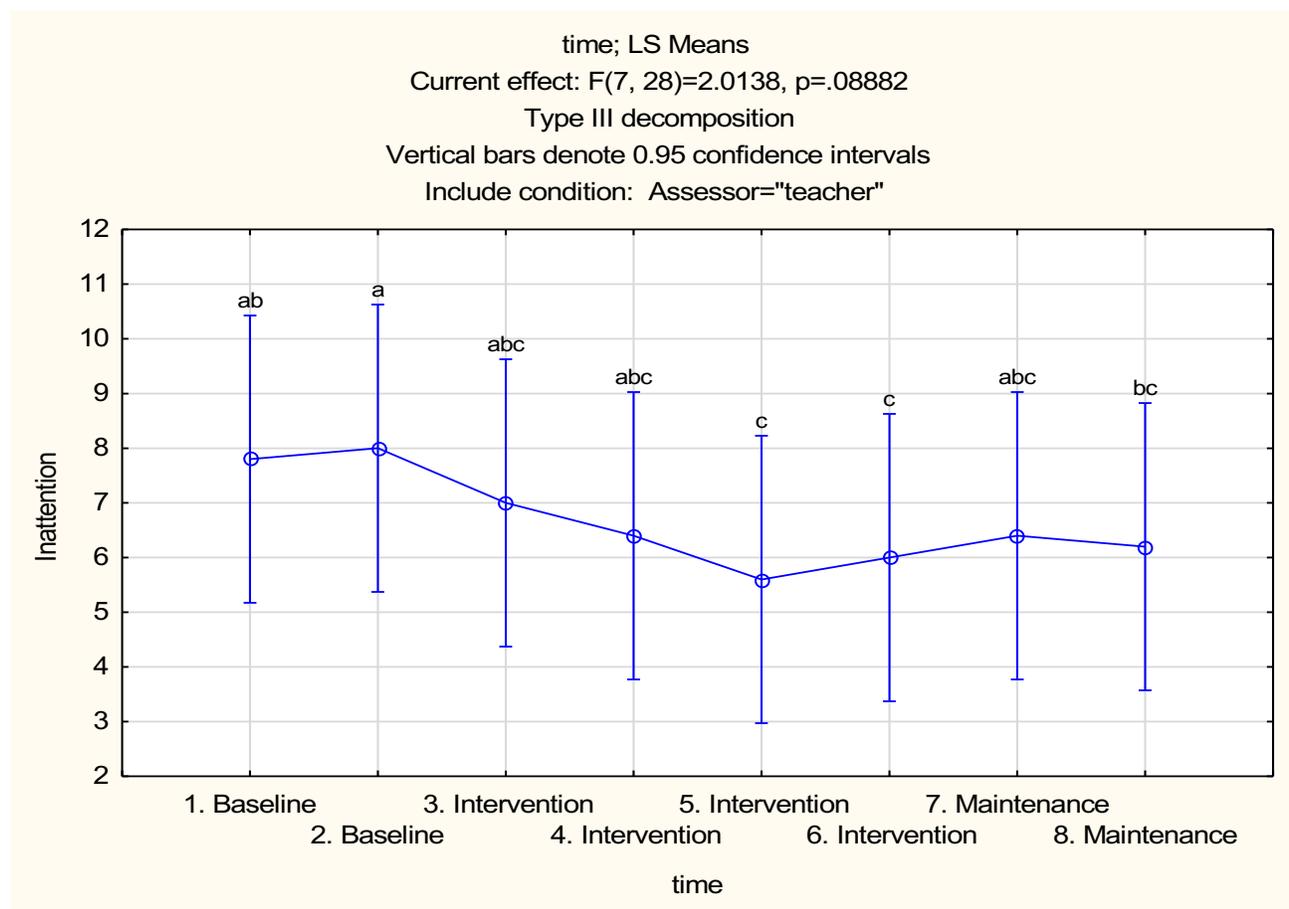


Figure 4.1a. Inattention scores reported by teachers over eight time points.

The above graph revealed a decreasing trend in the level of inattention in the classroom, reported by teachers, following the introduction of the CCPT condition. The decrease is significant at a 0.1 level ($p < 0.1$). The researcher can, therefore, reject the H_0 at 10% and accept the H_1 at 90% regarding levels of inattention in the classroom as reported by teachers.

By examining Figure 4.1a one can see a decreasing trend in levels of inattention from time point 1 (the first week of the baseline phase) to time point 5 (the second last week of the intervention phase). Thereafter, during the maintenance phase, there was a gradual increase. However, it did not increase back to the same level as the baseline phase.

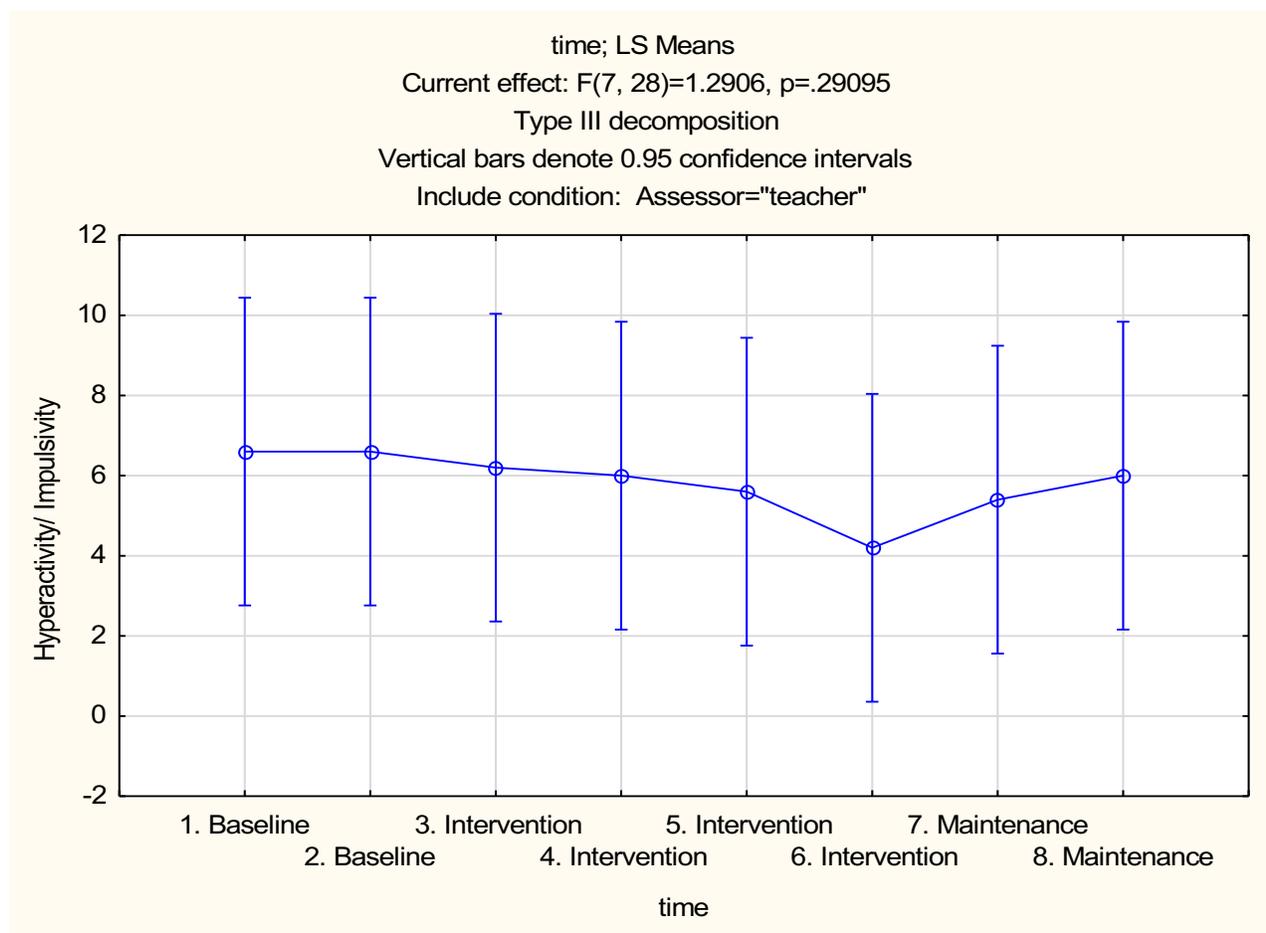


Figure 4.1b. Hyperactivity/Impulsivity scores reported by teachers over eight time points.

The above graph revealed a slight decrease in the level of hyperactivity/impulsivity in the classroom, reported by teachers, following the introduction of the CCPT condition. Although there is a decrease, the decrease was not significant ($p>0.1$). The researcher can, therefore, accept the H_0 and reject the H_1 regarding levels of hyperactivity/impulsivity in the classroom as reported by teachers.

By examining Figure 4.1b one can see a decrease in levels of hyperactivity/impulsivity occurred between time point 1 (the first week of the baseline phase) to time point 6 (the last week of the intervention phase). However, during the maintenance phase, there was an increase to approximately the same level as the baseline phase.

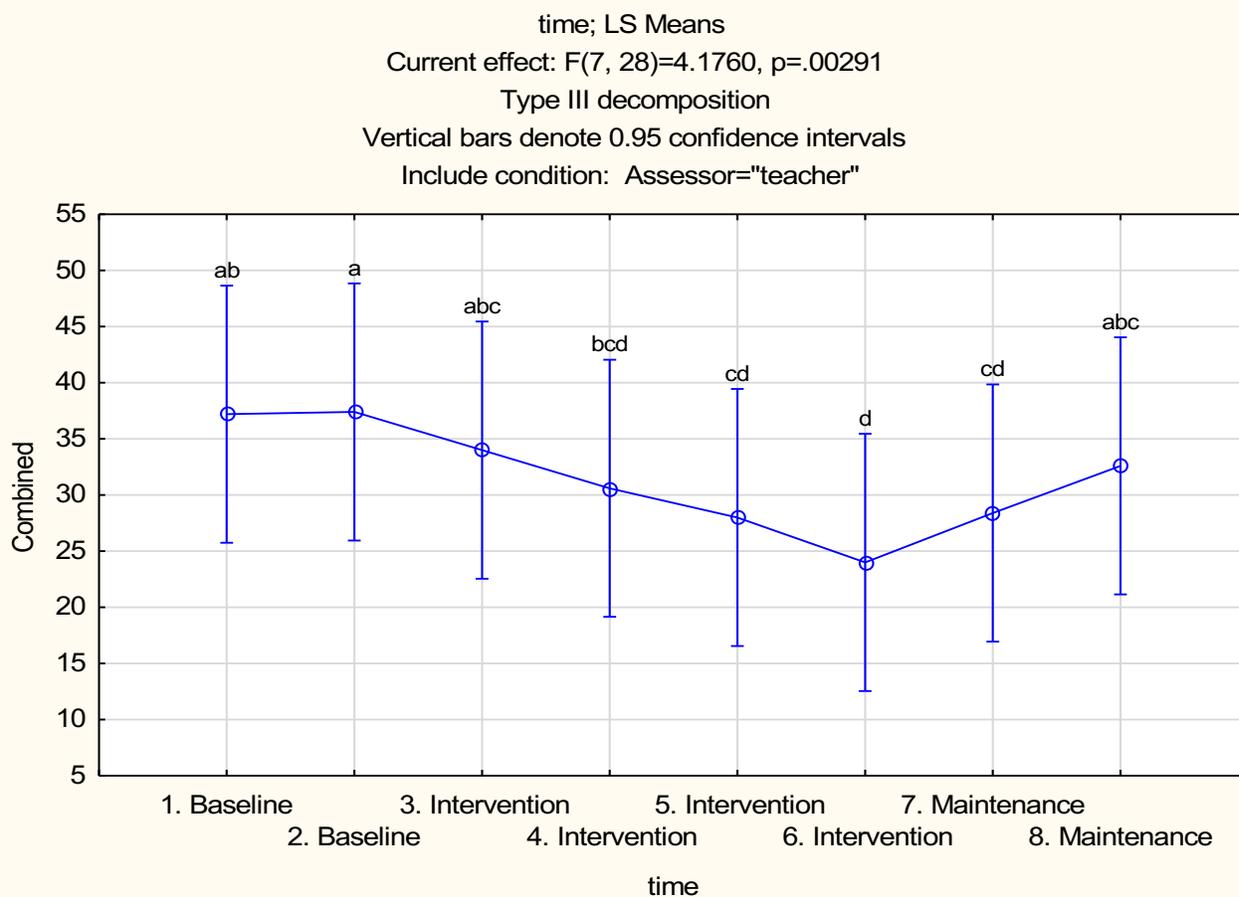


Figure 4.1c. Combined inattention and hyperactivity/impulsivity scores reported by teachers over eight time points.

The above graph revealed a significant decrease in the level of inattention and hyperactivity/impulsivity combined in the classroom, reported by teachers, following the introduction of the CCPT condition. The decrease is significant at a 0.01 level ($p<0.01$). The researcher can,

therefore, reject the H_0 at 1% and accept the H_1 at 99% regarding levels of inattention combined with hyperactivity/impulsivity in the classroom as reported by teachers.

By examining Figure 4.1c one can see a decrease in levels of combined inattention and hyperactivity/impulsivity from time point 1 (the first week of the baseline phase) to time point 6 (the last week of the intervention phase). Thereafter, during the maintenance phase, there was an increase to approximately the same level as the baseline phase.

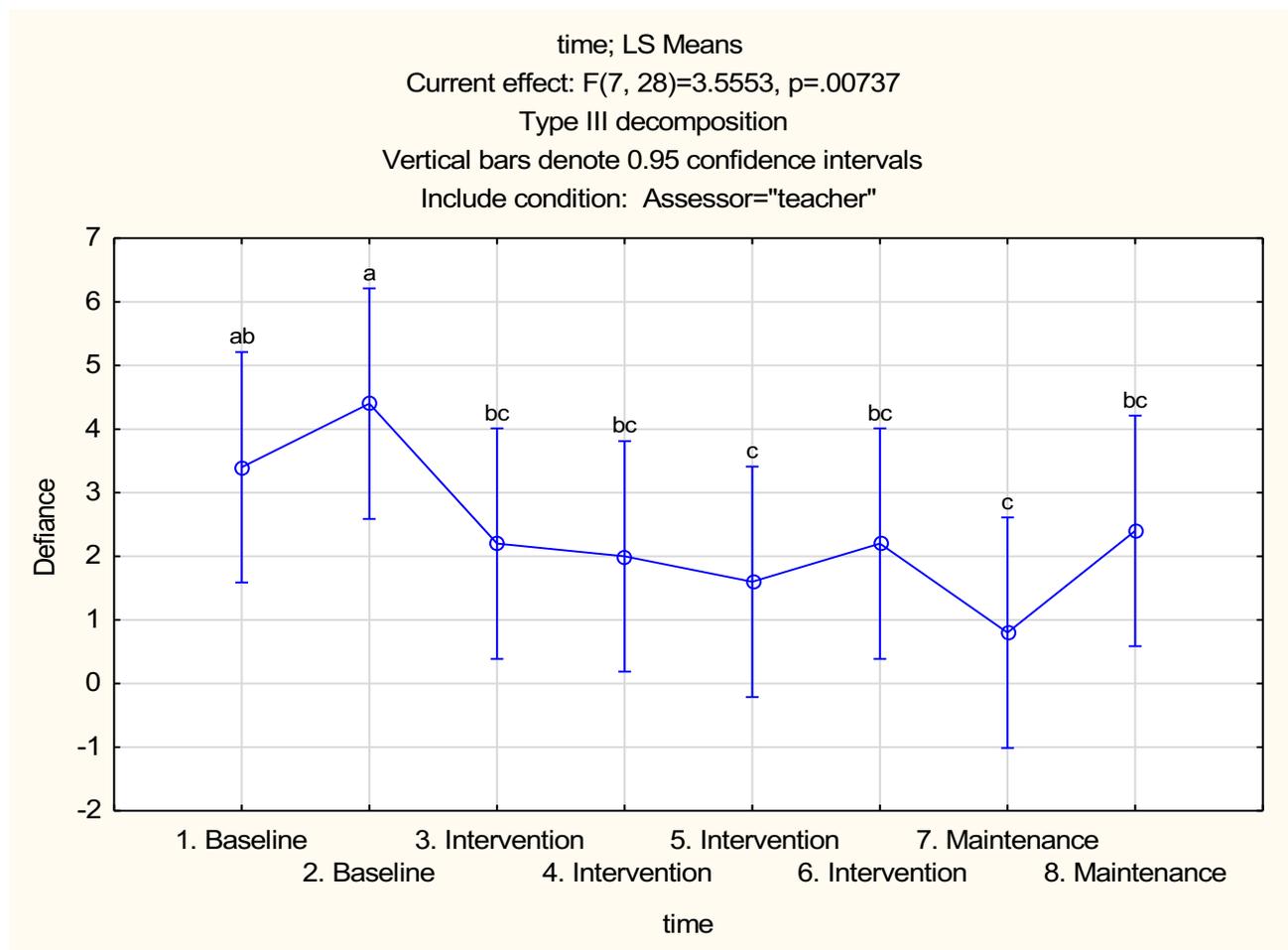


Figure 4.1d. Defiance scores reported by teachers over eight time points.

The above graph revealed a significant decrease in the level of defiance in the classroom, reported by teachers, following the introduction of the play therapy condition. The decrease is significant at a 0.01 level ($p < 0.01$). The researcher can, therefore, reject the H_0 at 1% and accept the H_1 at 99% regarding levels of defiance in the classroom as reported by teachers.

By examining Figure 4.1d one can see a decrease in levels of defiance from time point 1 (the first week of the baseline phase) to time point 7 (the first week of the maintenance phase). Thereafter, during the remainder of the maintenance phase, there was an increase. However, it did not increase back to the same level as the baseline phase.

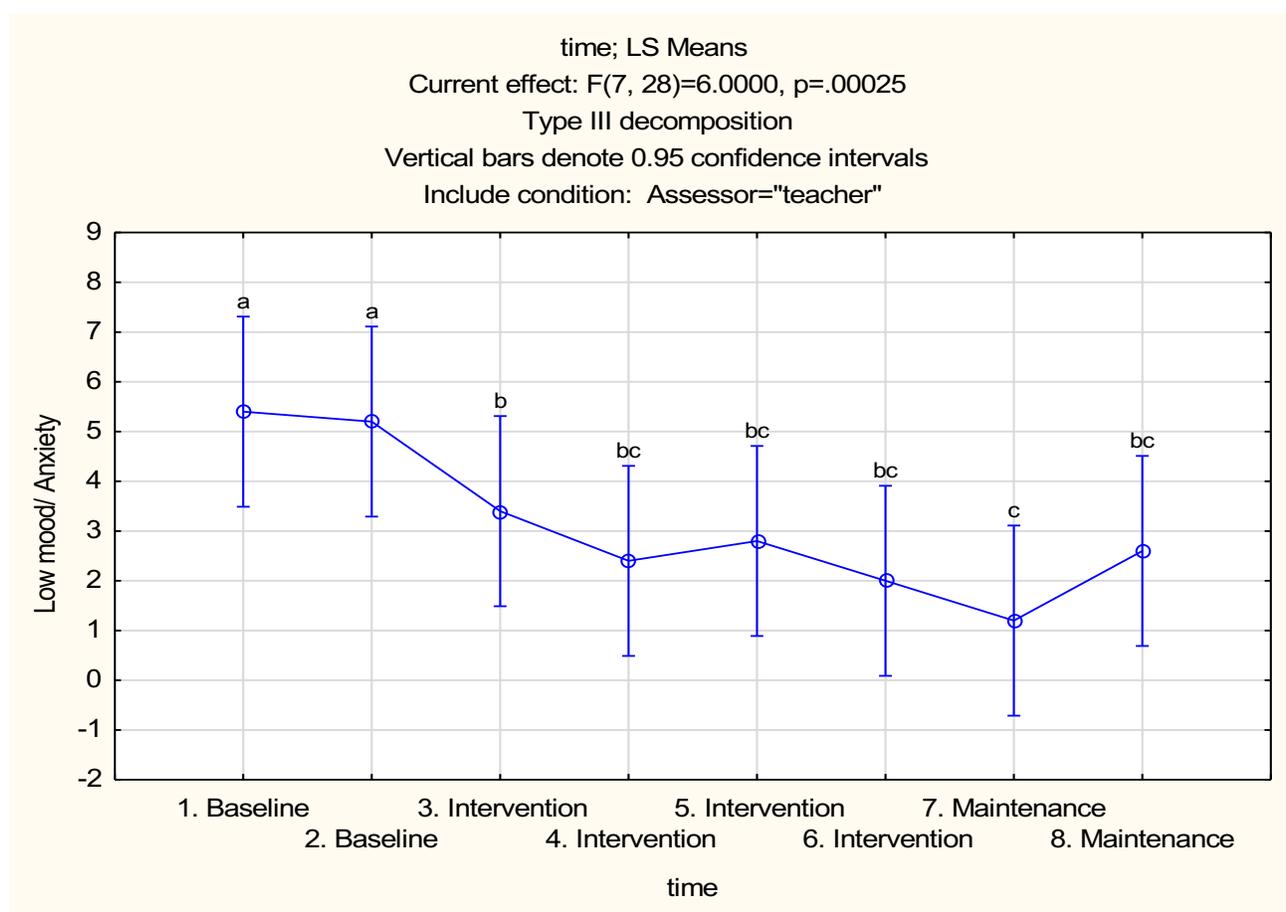


Figure 4.1e. Low mood/anxiety scores reported by teachers over eight time points.

The above graph revealed a significant decrease in the level of low mood or anxiety in the classroom, reported by teachers, following the introduction of the play therapy condition. The decrease is significant at a 0.01 level ($p < 0.01$). The researcher can, therefore, reject the H_0 at 1% and accept the H_1 at 99% regarding levels of low mood or anxiety in the classroom as reported by teachers.

By examining Figure 4.1e one can see a decrease in levels of defiance from time point 1 (the first week of the baseline phase) to time point 7 (the first week of the maintenance phase). Thereafter, during the remainder of the maintenance phase, there was an increase. However, it did not increase back to the same level as the baseline phase.

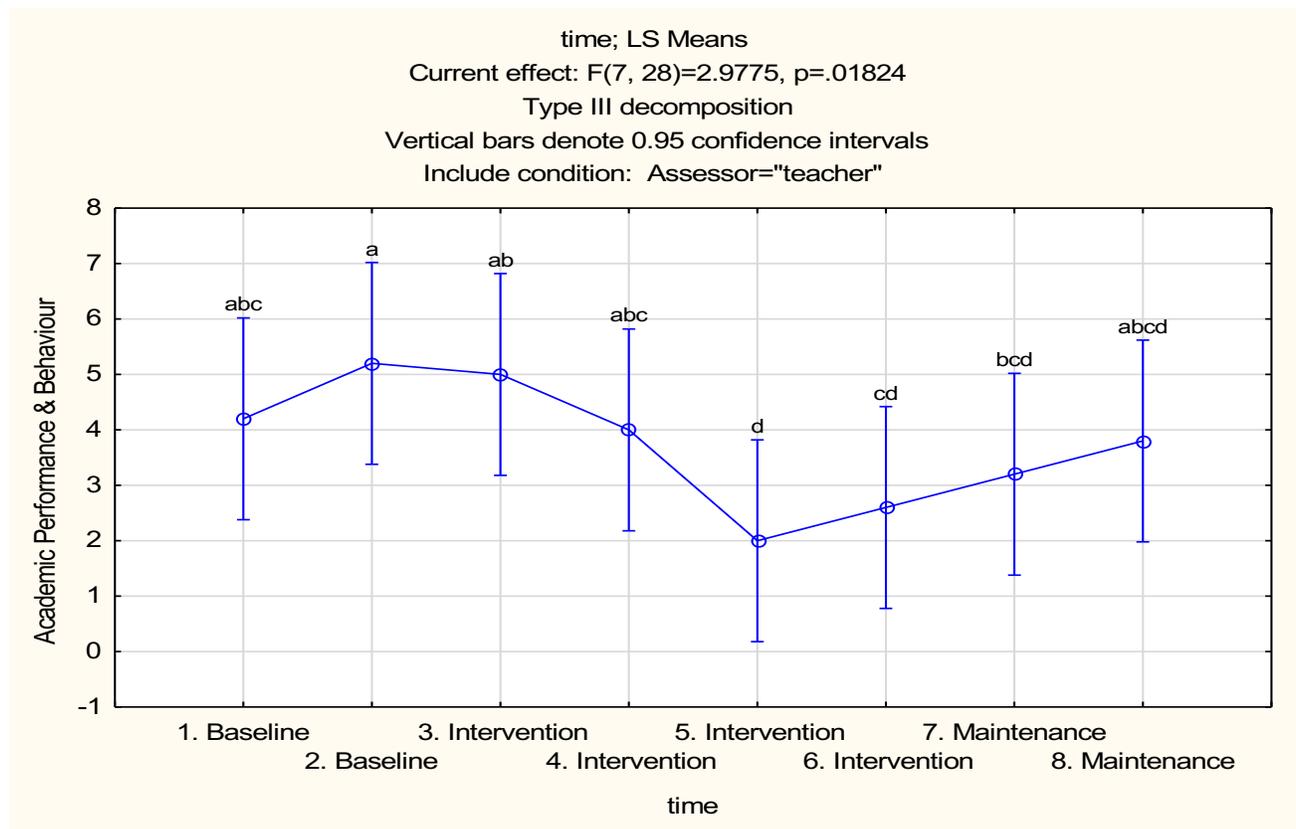


Figure 4.1f. Academic performance and behaviour scores reported by teachers over eight time points.

The above graph revealed a significant decrease in poor academic performance and behaviour in the classroom, reported by teachers, following the introduction of the play therapy condition. The decrease is significant at a 0.05 level ($p < 0.05$). The researcher can, therefore, reject the H_0 at 5% and accept the H_1 at 95% regarding academic performance and behaviour in the classroom as reported by teachers.

By examining Figure 4.1f one can see a decrease in levels of low mood or anxiety from time point 1 (the first week of the baseline phase) to time point 7 (the first week of the maintenance phase). Thereafter, during the maintenance phase, there was an increase to approximately the same level as the baseline phase.

4.3.2 Parent responses

Subjects' behaviour, emotion and academic performance at home were assessed by their parents through repeated measurement over four weeks. Subjects' parents were instructed to rate their behaviour, emotion and academic performance once a week at the end of a day during the four weeks surrounding the intervention. The below section displays the average scores for the various subscales across baseline and maintenance conditions.

As mentioned previously, subjects participated in two weeks of non-intervention baseline, four weeks of CCPT on two days per week, and two weeks of non-intervention maintenance. Figure 4.2 (a) - (f) graphically represents the parents' responses during the baseline and maintenance phases of the study. The results on the various scales of the VADPRS can be summarised as follows:

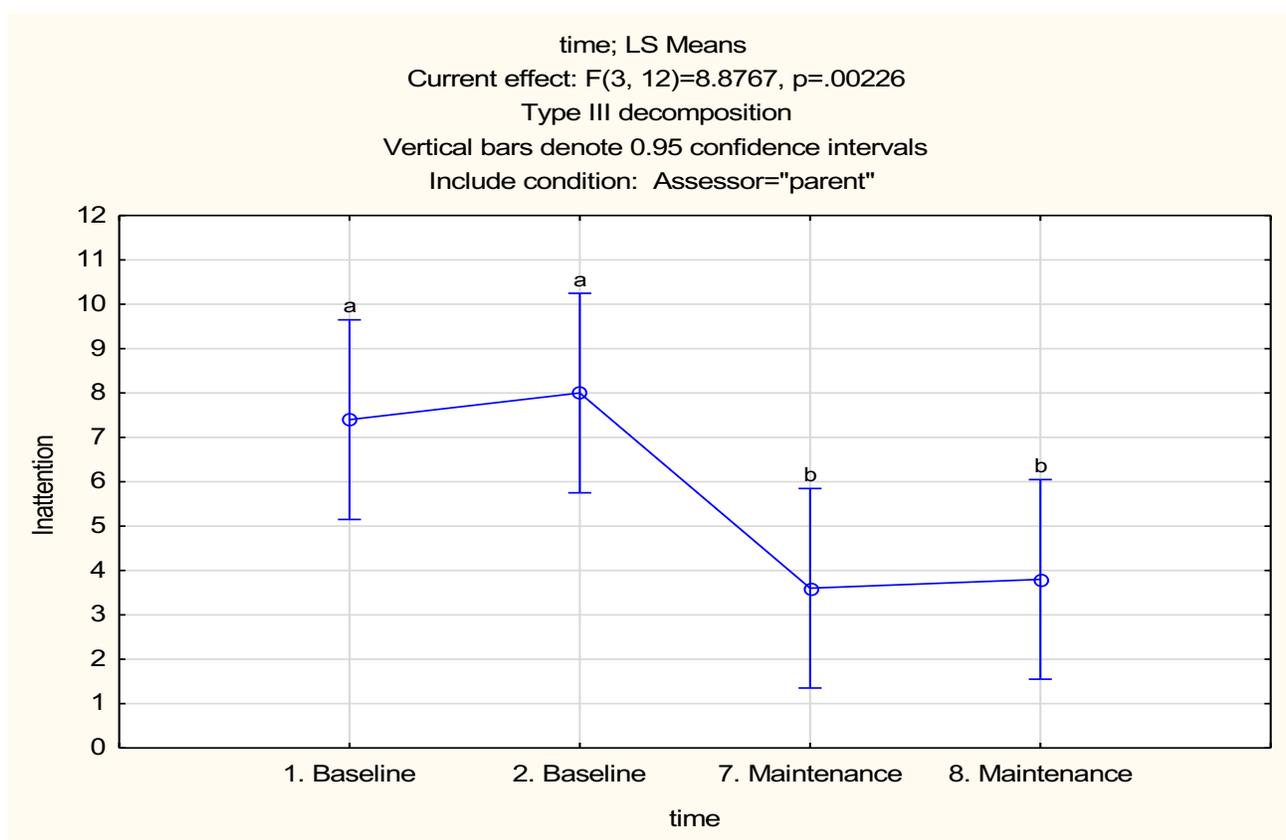


Figure 4.2a. Inattention scores reported by parents over four time points.

The above graph revealed a significant decrease in levels of inattention at home, reported by parents, between the baseline and maintenance condition. The decrease is significant at a 0.01 level ($p < 0.01$). The researcher can, therefore, reject the H_0 at 1% and accept the H_1 at 99% regarding levels of inattention at home as reported by parents.

By examining Figure 4.2a one can see a decrease in levels of inattention from time point 1 (the first week of the baseline phase) to time point 7 (the first week of the maintenance phase). Thereafter, during the remainder of the maintenance phase, there was a gradual increase. However, it did not increase back to the same level as the baseline phase.

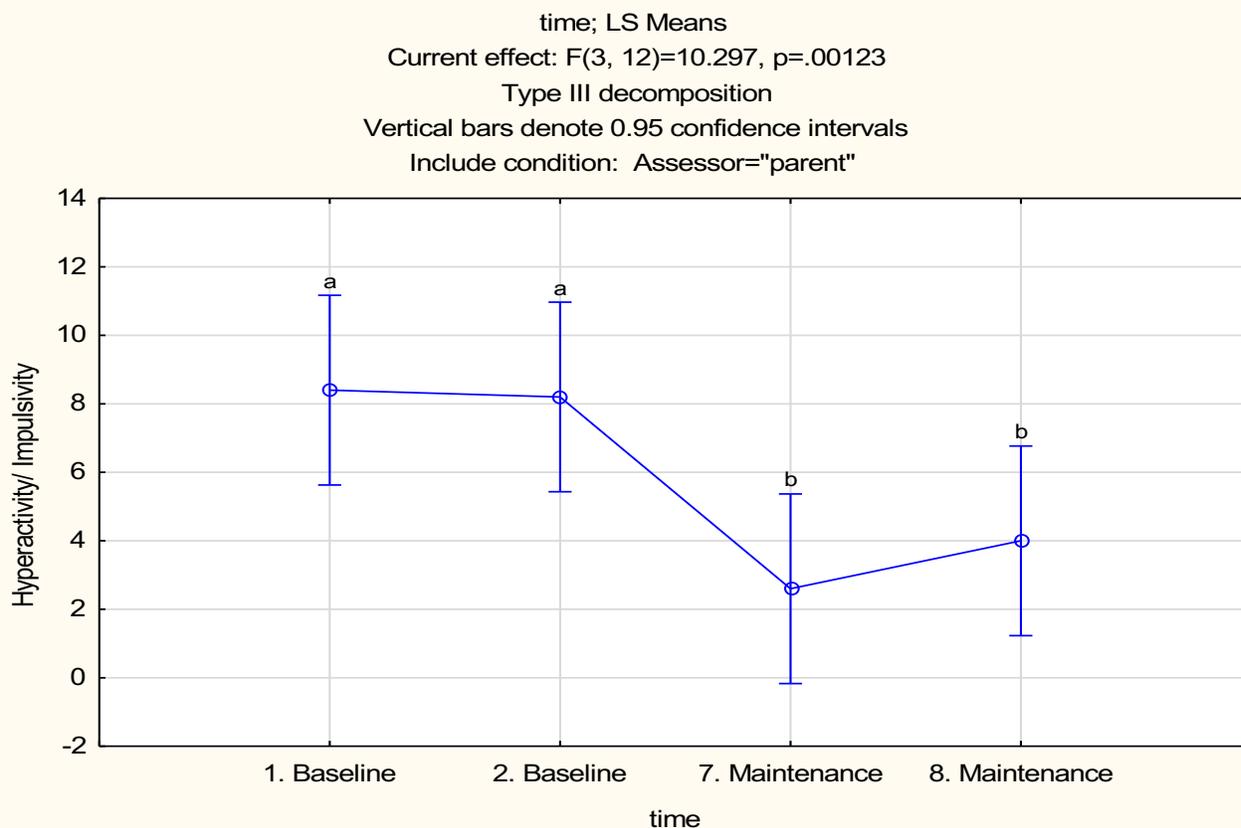


Figure 4.2b. Hyperactivity/impulsivity scores reported by parents over four time points.

The above graph revealed a significant decrease in levels of hyperactivity/impulsivity at home, reported by parents, between the baseline and maintenance condition. The decrease is significant at a 0.01 level ($p<0.01$). The researcher can, therefore, reject the H_0 at 1% and accept the H_1 at 99% regarding levels of hyperactivity/impulsivity at home as reported by parents.

By examining Figure 4.2b one can see a decrease in levels of hyperactivity/impulsivity from time point 1 (the first week of the baseline phase) to time point 7 (the first week of the maintenance phase). Thereafter, during the remainder of the maintenance phase, there was a gradual increase. However, it did not increase back to the same level as the baseline phase.

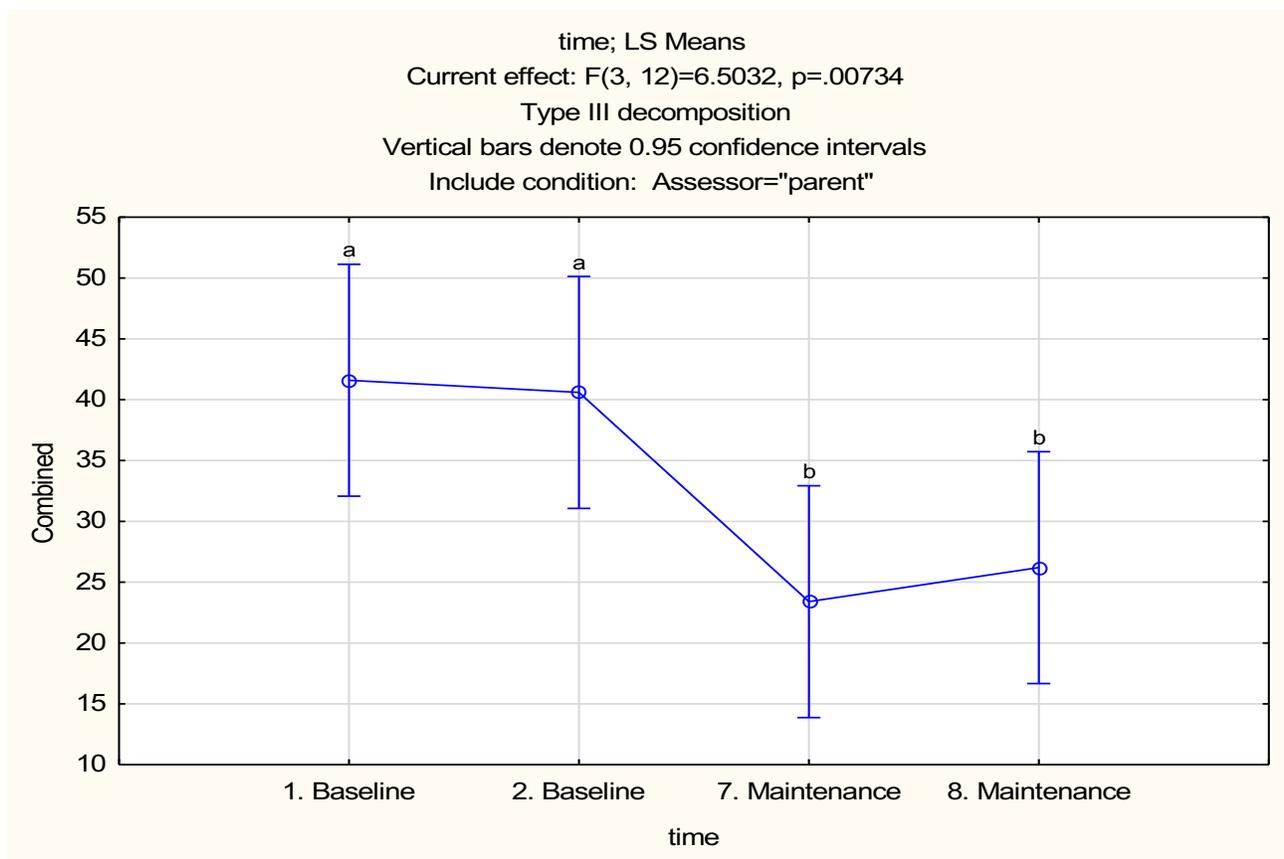


Figure 4.2c. Combined inattention and hyperactivity/impulsivity scores reported by parents over four time points.

The above graph revealed a significant decrease in levels of inattention combined with hyperactivity/impulsivity at home, reported by parents, between the baseline and maintenance condition. The decrease is significant at a 0.01 level ($p < 0.01$). The researcher can, therefore, reject the H_0 at 1% and accept the H_1 at 99% regarding levels of inattention combined with hyperactivity/impulsivity at home as reported by parents.

By examining Figure 4.2c one can see a decrease in levels of combined inattention and hyperactivity/impulsivity from time point 1 (the first week of the baseline phase) to time point 7 (the

first week of the maintenance phase). Thereafter, during the remainder of the maintenance phase, there was a gradual increase. However, it did not increase back to the same level as the baseline phase.

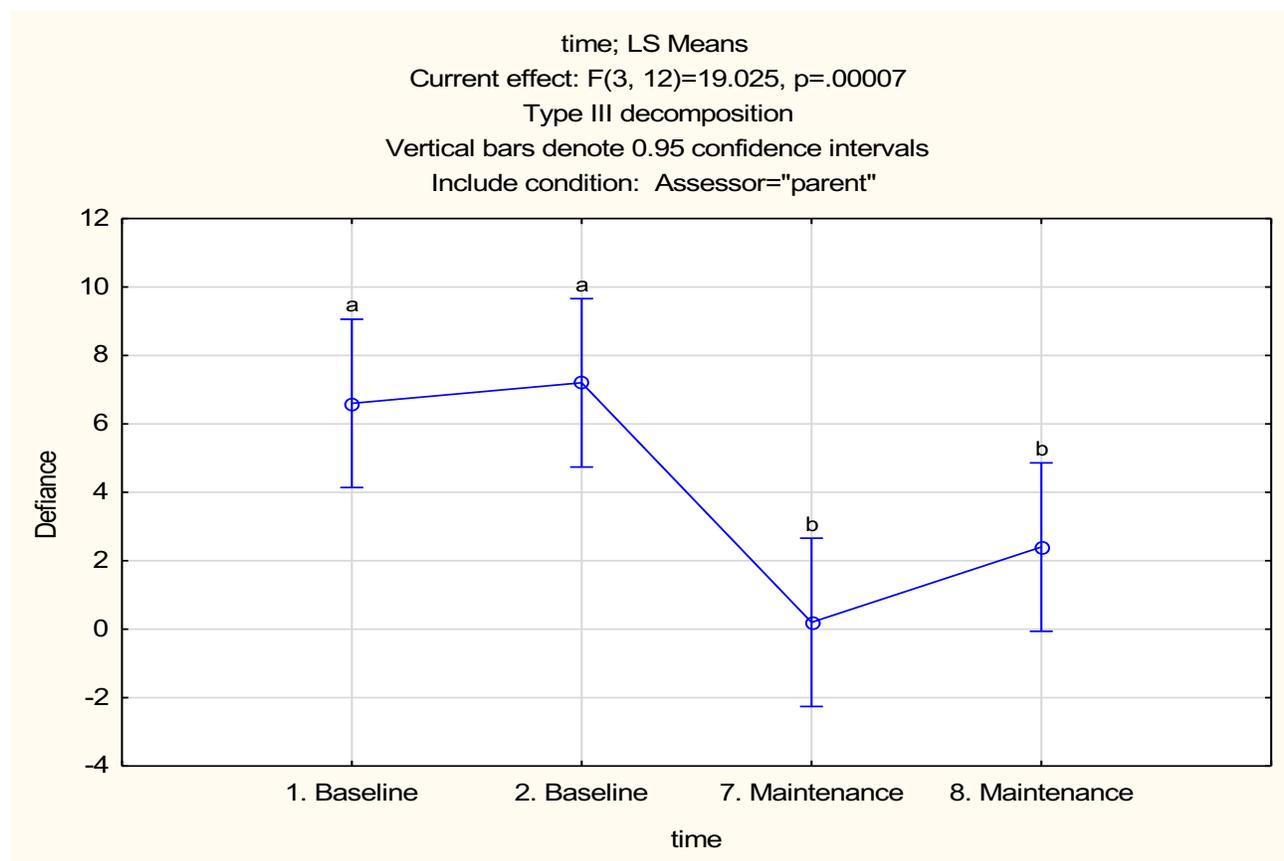


Figure 4.2d. Defiance scores reported by parents over four time points.

The above graph revealed a significant decrease in levels of defiance at home, reported by parents, between the baseline and maintenance condition. The decrease is significant at a 0.01 level ($p < 0.01$). The researcher can, therefore, reject the H_0 at 1% and accept the H_1 at 99% regarding levels of defiance at home as reported by parents.

By examining Figure 4.2d one can see a decrease in levels of defiance from time point 1 (the first week of the baseline phase) to time point 7 (the first week of the maintenance phase). Thereafter,

during the remainder of the maintenance phase, there was a gradual increase. However, it did not increase back to the same level as the baseline phase.

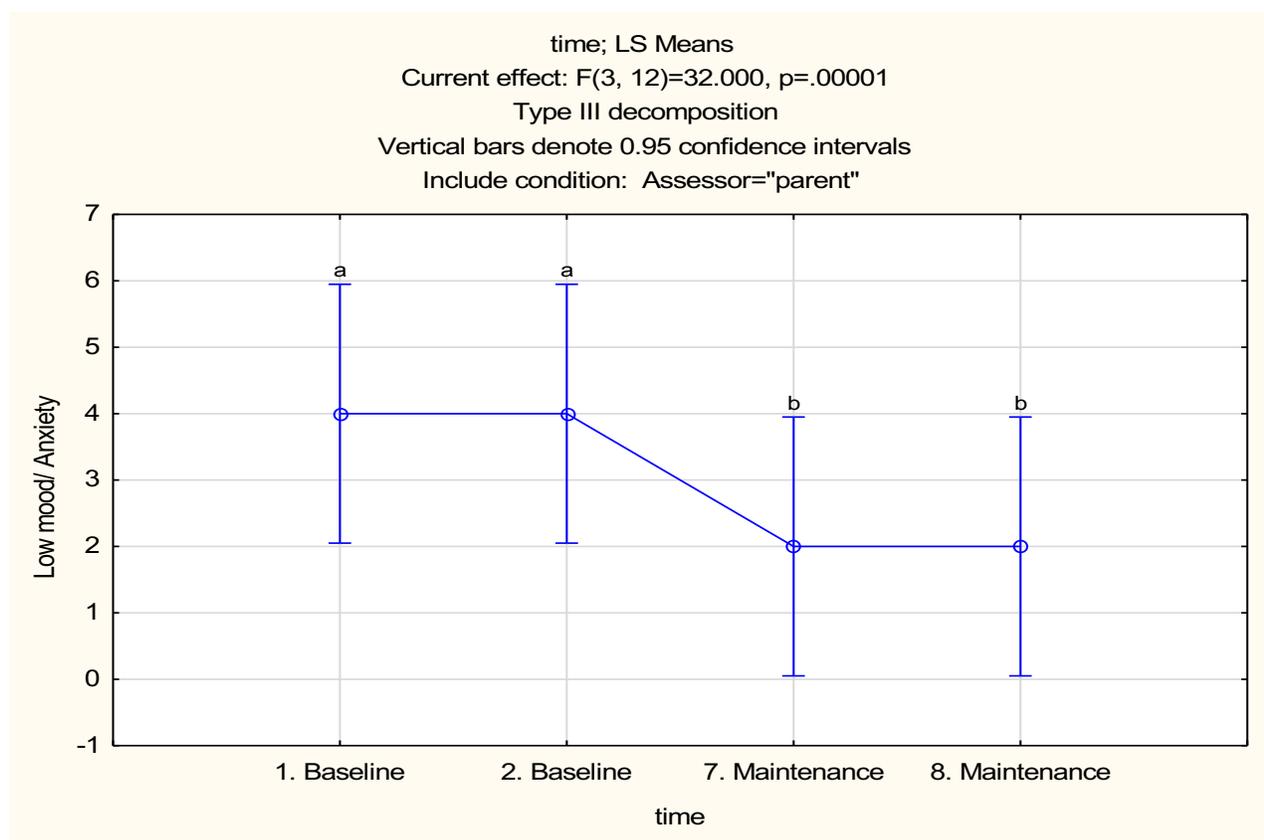


Figure 4.2e. Low mood/anxiety scores reported by parents over four time points

The above graph revealed a significant decrease in levels of low mood or anxiety at home, reported by parents, between the baseline and maintenance condition. The decrease is significant at a 0.01 level ($p < 0.01$). The researcher can, therefore, reject the H_0 at 1% and accept the H_1 at 99% regarding levels of low mood or anxiety at home as reported by parents.

By examining Figure 4.2e one can see a decrease in levels of low mood or anxiety from time point 1 (the first week of the baseline phase) to time point 7 (the first week of the maintenance phase). Thereafter, during the remainder of the maintenance phase, levels remained constant.

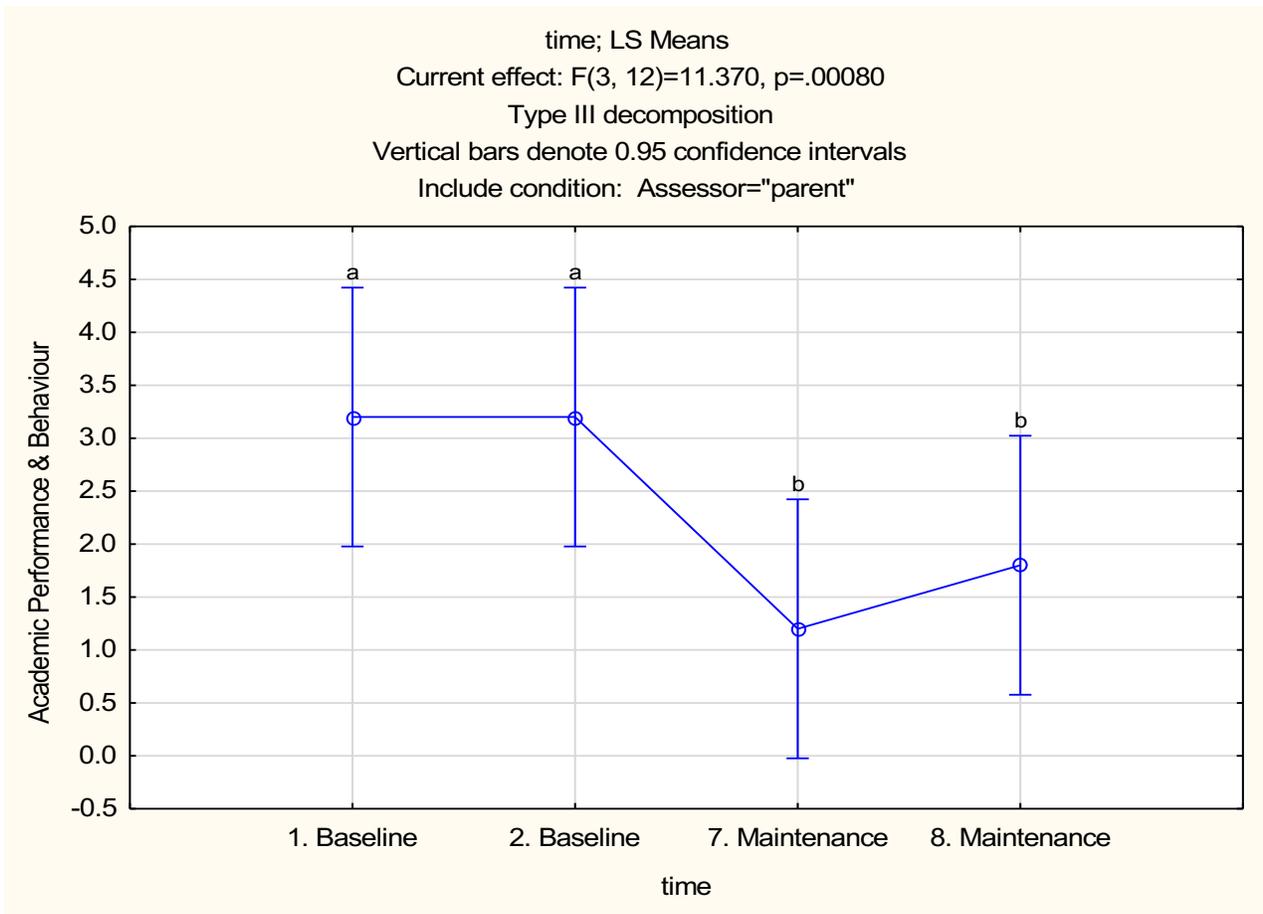


Figure 4.2f. Academic performance and behaviour scores reported by parents over four time points.

The above graph revealed a significant decrease in poor academic performance and behaviour at home, reported by parents, between the baseline and maintenance condition. The decrease is significant at a 0.01 level ($p < 0.01$). The researcher can, therefore, reject the H_0 at 1% and accept the H_1 at 99% regarding poor academic performance and behaviour at home as reported by parents.

By examining Figure 4.2f one can see a decrease in levels of poor academic performance and behaviour from time point 1 (the first week of the baseline phase) to time point 7 (the first week of

the maintenance phase). Thereafter, during the remainder of the maintenance phase, there was a gradual increase. However, it did not increase back to the same level as the baseline phase.

4.3.3 Teacher and parent responses combined

The below section displays the average scores for the various subscales across baseline and maintenance conditions as reported by teachers and parents combined. Figure 4.3 (a) - (f) graphically represents the teacher's and parent's combined responses during the baseline and maintenance phases of the study. The results on the results on the various scales can be summarised as follows:

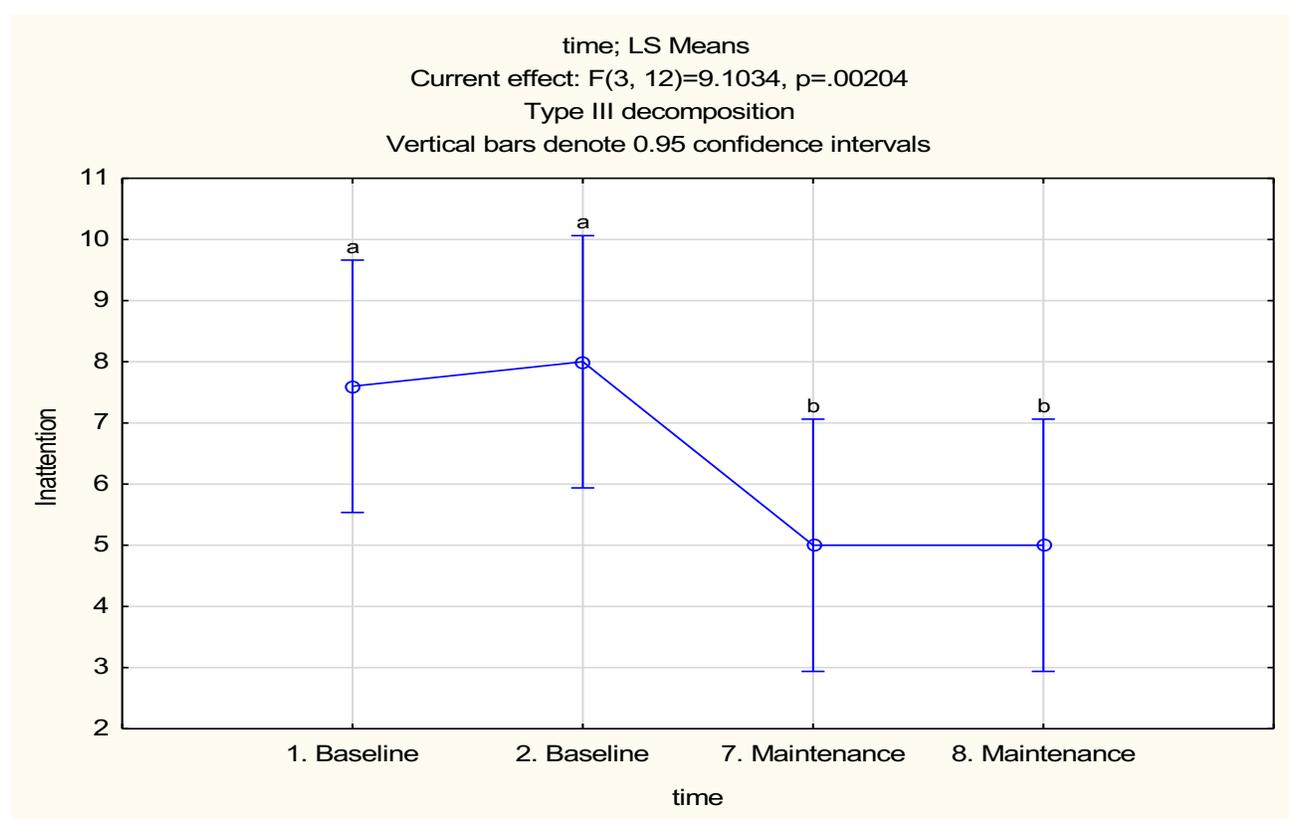


Figure 4.3a. Inattention scores reported by teachers and parents over four time points.

The above graph revealed a significant decrease in levels of inattention in the classroom and at home, reported by teachers and parents, between the baseline and maintenance condition. The decrease is significant at a 0.01 level ($p<0.01$). The researcher can, therefore, reject the H_0 at 1% and accept the

H_1 at 99% regarding levels of inattention in the classroom and at home as reported by teachers and parents.

By examining Figure 4.3a one can see a decrease in levels of inattention from time point 1 (the first week of the baseline phase) to time point 7 (the first week of the maintenance phase). Thereafter, during the remainder of the maintenance phase, levels remained constant.

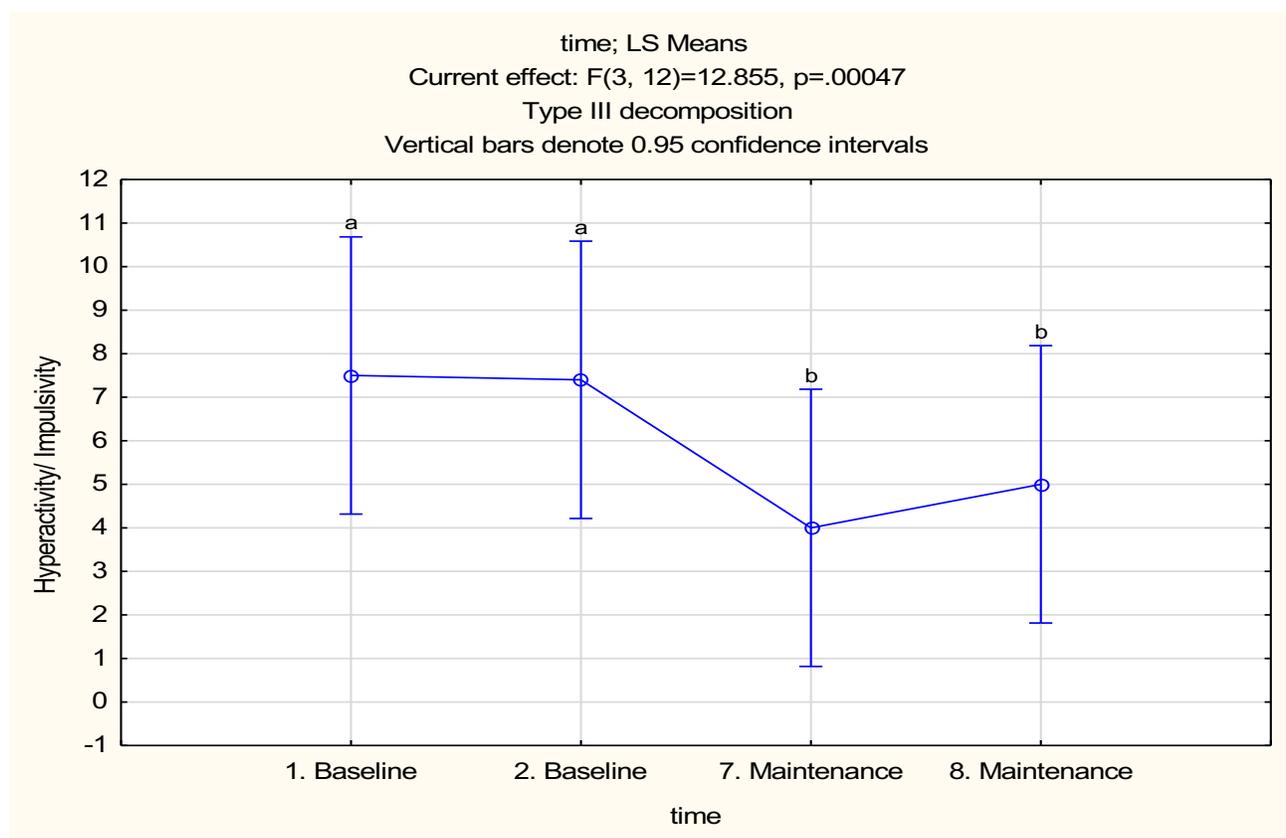


Figure 4.3b. Hyperactivity/impulsivity scores reported by teachers and parents over four time points.

The above graph revealed a significant decrease in levels of hyperactivity/impulsivity in the classroom and at home, reported by teachers and parents, between the baseline and maintenance condition.

The decrease is significant at a 0.01 level ($p < 0.01$). The researcher can, therefore, reject the H_0 at 1% and accept the H_1 at 99% regarding levels of hyperactivity/impulsivity in the classroom and at home as reported by teachers and parents.

By examining Figure 4.3b one can see a decrease in levels of hyperactivity/impulsivity from time point 1 (the first week of the baseline phase) to time point 7 (the first week of the maintenance phase). Thereafter, during the remainder of the maintenance phase, there was a gradual increase. However, it did not increase back to the same level as the baseline phase.

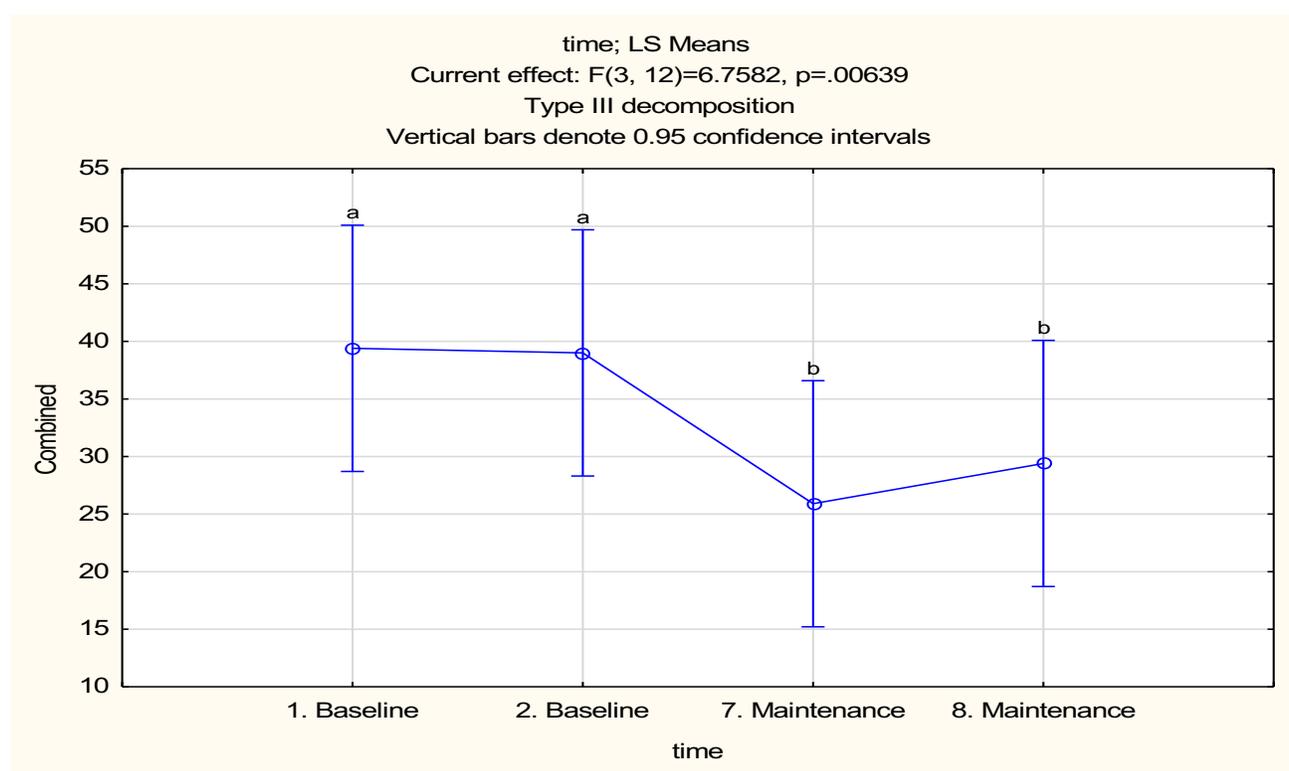


Figure 4.3c. Combined inattention and hyperactivity/impulsivity scores reported by teachers and parents over four time points.

The above graph revealed a significant decrease in levels of inattention and hyperactivity/impulsivity combined in the classroom and at home, reported by teachers and parents, between the baseline and maintenance condition. The decrease is significant at a 0.01 level ($p < 0.01$). The researcher can,

therefore, reject the H_0 at 1% and accept the H_1 at 99% regarding levels of inattention and hyperactivity/impulsivity combined in the classroom and at home as reported by teachers and parents.

By examining Figure 4.3c one can see a decrease in levels of combined inattention and hyperactivity/impulsivity from time point 1 (the first week of the baseline phase) to time point 7 (the first week of the maintenance phase). Thereafter, during the remainder of the maintenance phase, there was a gradual increase. However, it did not increase back to the same level as the baseline phase.

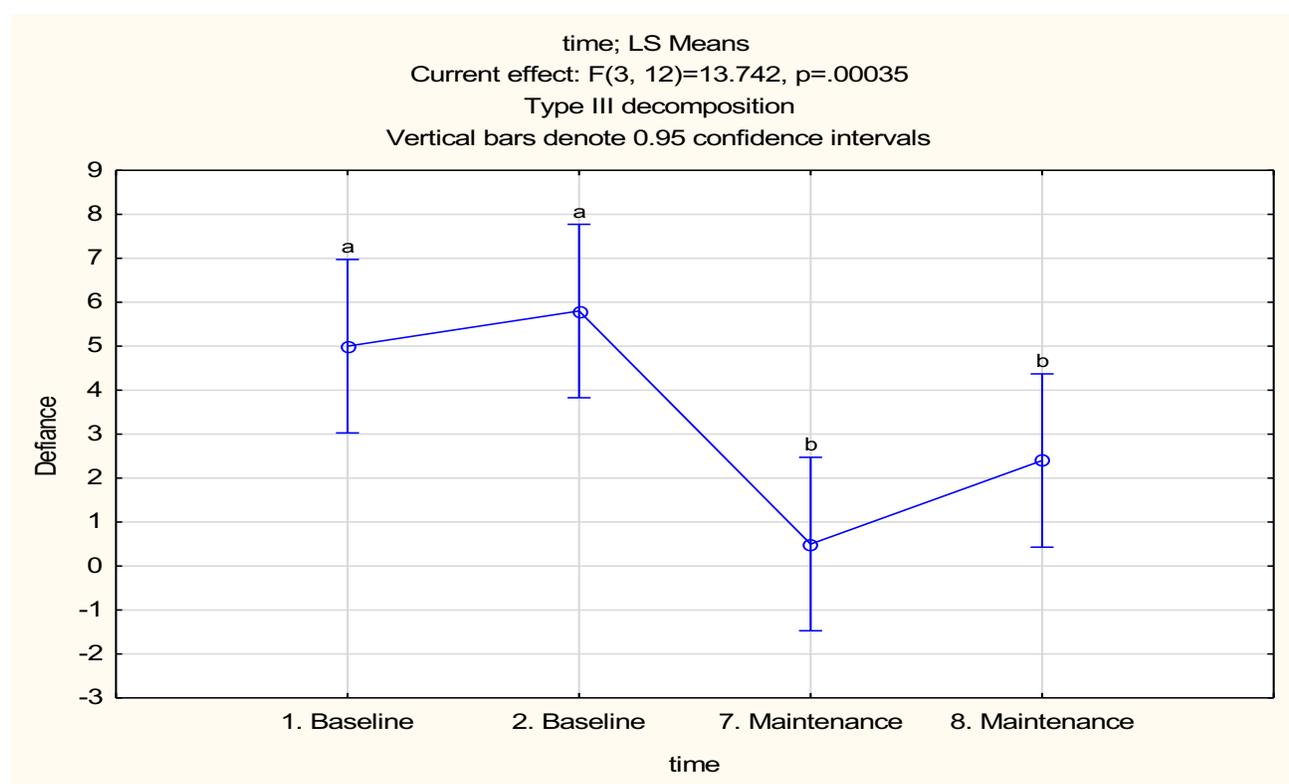


Figure 4.3d. Defiance scores reported by teachers and parents over four time points.

The above graph revealed a significant decrease in levels of defiance in the classroom and at home, reported by teachers and parents, between the baseline and maintenance condition. The decrease is significant at a 0.01 level ($p<0.01$). The researcher can, therefore, reject the H_0 at 1% and accept the

H_1 at 99% regarding levels of defiance in the classroom and at home as reported by teachers and parents.

By examining Figure 4.3d one can see a decrease in levels of defiance from time point 1 (the first week of the baseline phase) to time point 7 (the first week of the maintenance phase). Thereafter, during the remainder of the maintenance phase, there was a gradual increase. However, it did not increase back to the same level as the baseline phase.

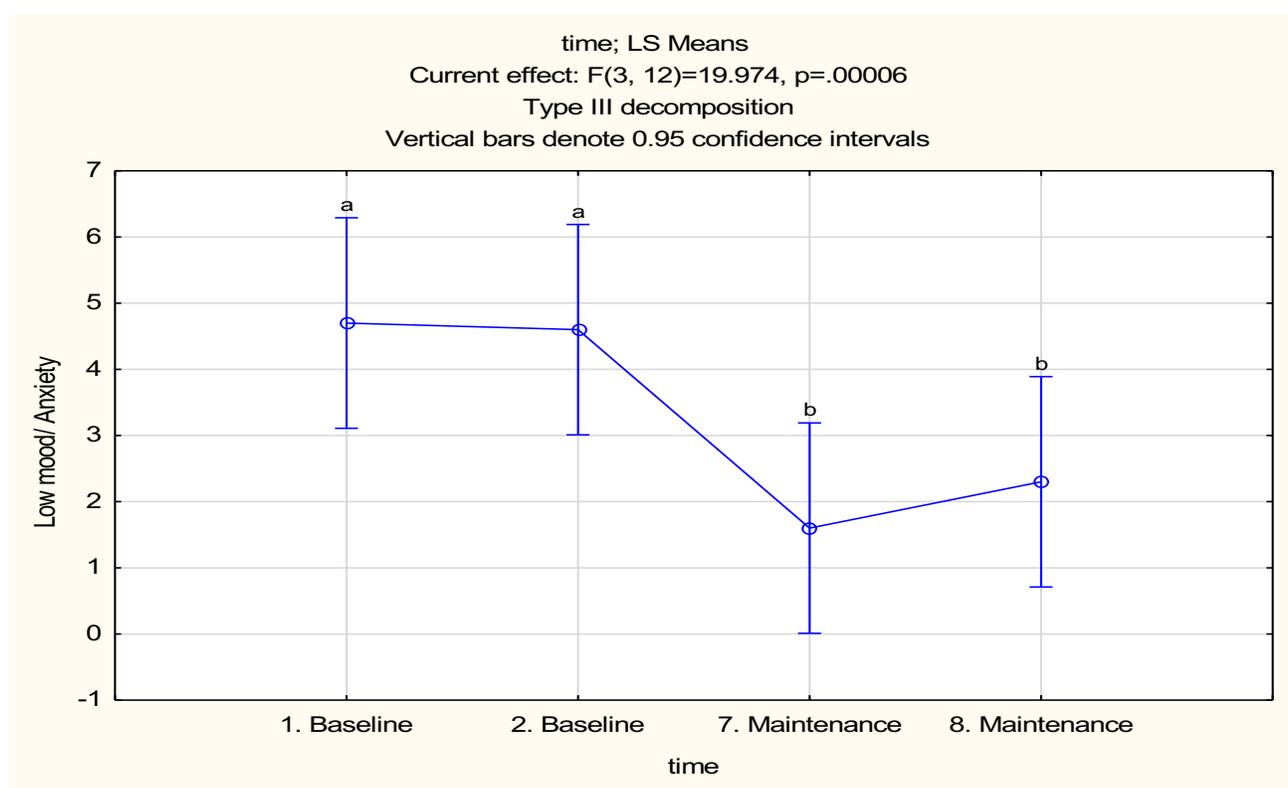


Figure 4.3e. Low mood/anxiety scores reported by parents and teachers over four time points.

The above graph revealed a significant decrease in levels of low mood or anxiety in the classroom and at home, reported by teachers and parents, between the baseline and maintenance condition. The decrease is significant at a 0.01 level ($p<0.01$). The researcher can, therefore, reject the H_0 at 1% and

accept the H_1 at 99% regarding levels of low mood or anxiety in the classroom and at home as reported by teachers and parents.

By examining Figure 4.3e one can see a decrease in levels of low mood or anxiety from time point 1 (the first week of the baseline phase) to time point 7 (the first week of the maintenance phase). Thereafter, during the remainder of the maintenance phase, there was a gradual increase. However, it did not increase back to the same level as the baseline phase.

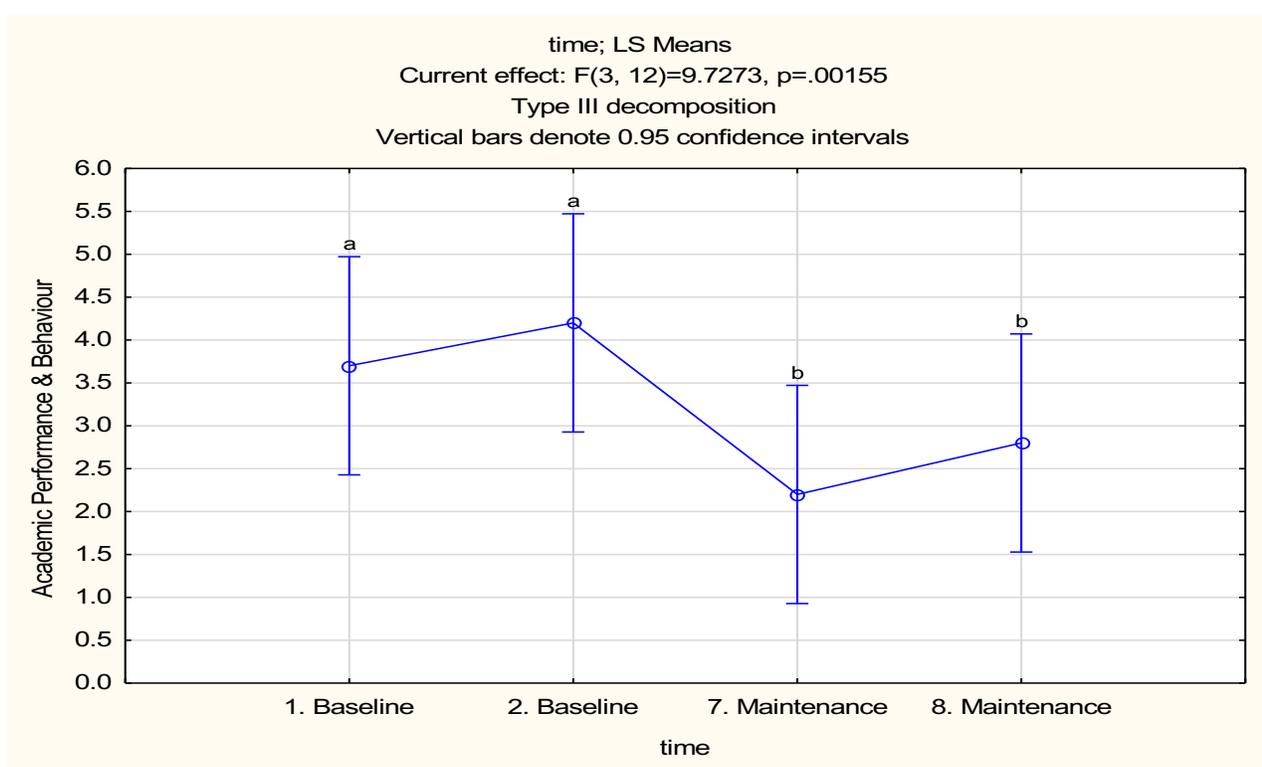


Figure 4.3f. Academic performance and behaviour scores reported by parents and teachers over four time points.

The above graph revealed a significant decrease in poor academic performance and behaviour in the classroom and at home, reported by teachers and parents, between the baseline and maintenance condition. The decrease is significant at a 0.01 level ($p<0.01$). The researcher can, therefore, reject

the H_0 at 1% and accept the H_1 at 99% regarding poor academic performance and behaviour in the classroom and at home as reported by teachers and parents.

By examining Figure 4.3f one can see a decrease in levels of poor academic performance and behaviour from time point 1 (the first week of the baseline phase) to time point 7 (the first week of the maintenance phase). Thereafter, during the remainder of the maintenance phase, there was a gradual increase. However, it did not increase back to the same level as the baseline phase.

4.4 CONCLUSION

In this chapter, visual and descriptive results from data analysis were presented regarding the effects of CCPT on children diagnosed with ADHD. The results over the various time points recorded by teachers and parents were presented and analysed to investigate the possibility of statistically significant changes in behaviour, emotion and academic performance of children diagnosed with ADHD before, during and after an intervention of CCPT. The following results came to light:

After analyses of teacher responses over eight time points, statistically significant differences between data at various time points were found in the following categories: combined inattention and hyperactivity, defiance, and low mood and anxiety ($P < 0.01$); academic performance ($P < 0.05$); and a trend for inattention (significant at 10%, $p = 0.09$). No significant differences were found between time points for the hyperactivity/impulsivity category.

After analyses of parent responses over four time points, statistically significant differences between data at various time points were found in all categories ($P < 0.01$).

After analyses of combined teacher and parent responses over four time points, statistically significant differences between data at various time points were found in all categories ($P < 0.01$).

In chapter 5, the research findings are presented and discussed as they relate to the research questions and hypotheses, limitations of the study, the generalizability of the results, and recommendations for future research. A conclusion is offered.

CHAPTER 5

SUMMARY, FINDINGS AND RECOMMENDATIONS

5.1 INTRODUCTION

This study aimed to acquire a better understanding of the effectiveness of CCPT on children diagnosed with ADHD. The research questions and hypotheses were approached through the lens of a post-positivist paradigm, and the study was conducted using a quantitative methodology. The use of quantitative data analysis enabled the researcher to gain better insight into the effect of the CCPT intervention on the children's behaviour, emotions and academic performance. The research findings indicated that the behaviour, emotions and academic performance of the children who took part in the CCPT intervention were affected positively.

In this chapter, the research findings are presented as they relate to the research questions and hypotheses, limitations of the study, the generalisability of the results, and recommendations for future research. A conclusion is offered.

5.2 RESEARCH FINDINGS

The following results came to light from the findings discussed in the previous chapter:

- After analyses of teacher responses over eight time points, statistically significant differences between data at various time points were found in the following categories: combined inattention and hyperactivity, defiance, and low mood and anxiety (at a 0.01 level); academic performance (at a 0.05 level); and inattention (at a 0.1 level). No significant differences were found between time points for the hyperactivity/impulsivity category.

- After analyses of parent responses over four time points, statistically significant differences between data at various time points were found in all categories (at a 0.01 level).
- After analyses of combined teacher and parent responses over four time points, statistically significant differences between data at various time points were found in all categories (at a 0.01 level).

For the purpose of this study, the following primary research question has been formulated:

- *Does an intervention of CCPT have an effect on the behaviour, emotions and academic performance of children who have been diagnosed with ADHD?*

Secondary research questions:

- *What do parents of children diagnosed with ADHD notice in their child's behaviour, emotions and academic performance, at home, before, during and after an intervention of CCPT has taken place?*
- *What do teachers of learners diagnosed with ADHD notice in learners' behaviour, emotions and academic performance, in the classroom, before, during and after an intervention of CCPT has taken place?*

In answering the secondary research questions, on average, both parents and teachers noticed a change in their child's behaviour, emotions and academic performance, at home and in the classroom, after an intervention of CCPT has taken place.

Thus, from the results, the null hypothesis can be rejected and the alternative hypothesis can be accepted.

5.3 DISCUSSION

This study was the first in South Africa to examine the effect of CCPT on children diagnosed with ADHD. The assumption of CCPT that through a genuine, caring and accepting therapeutic relationship, children diagnosed with ADHD would become more directed, controlled and accepting of themselves, guided this study (Landreth, 2002; Axline, 1947; Swan 2011). The hope was that this relationship would help the subjects better manage the symptoms of ADHD they were faced with. After examining the results of this study, it appears that the five children involved began to make strides in their self-directed growth process (Landreth, 2002; Swan, 2011). The results further extend support for the use of CCPT with children that have difficulties with inattention, hyperactivity or impulsivity, defiance, low mood, anxiety, academic performance and behaviour (Blinn, 1999; Ray, Schottelkorb, & Tsai, 2007; Schottelkorb & Ray, 2009; Swan, 2011).

The findings of the study at hand are in line with other experimental studies that showed the effectiveness of CCPT as an intervention for reducing children's externalised and internalised behaviours (Baggerly, 2004; Fall, Navelski, & Welch, 2002; Packman & Bratton, 2003; Raman & Kapur 1999; Swan, 2011; Blinn, 1999; Schottelkorb & Ray, 2009; Bratton, Ceballos, Sheely-Moore, Meany-Walen, Pronchenko, & Jones, 2013; Fall et al., 2002; Garza & Bratton, 2005; & Schumann, 2010). The results reinforce findings from previous studies in that there was a decrease in observed behavioural difficulties of elementary school children during and after an intervention of CCPT (Swan, 2011; Schottelkorb & Ray, 2009; & Swan & Ray, 2014). The findings of this study also correspond with the findings of a play therapy group design research in which parents and teachers reported a significant decrease in behavioural difficulties in the school setting through participation in CCPT (Bratton et al., 2013; Fall et al., 2002; Garza & Bratton, 2005; & Schumann, 2010).

The above suggests that a child-centered intervention could be clinically useful as an alternative, or an addition to, current behavioural and pharmaceutical practices. As with the research conducted by Swan (2011) and Swan & Ray (2014), the results from this study contradict findings from a large mixed-methods analysis of literature that was done in the field of special education. The findings suggested that CCPT as a treatment focuses on the person of the child rather than specific patterns of a child's behaviour (Didden, Pieter, & Korzilius, 1997; Schottelkorb, Swan, Jahn, Haas, & Hacker, 2015).

Play therapy researchers have begun to investigate the elements that contribute to positive change in CCPT (Ray, Stulmaker, Lee, & Silverman, 2013). As Schottelkorb et al. (2015) and Ray et al. (2013) hypothesised, the researcher surmises that CCPT may be an effective intervention due to the genuine therapeutic relationship and opportunities for emotional expression and self-regulation within the sessions. It can be hypothesised that children can gain an increased awareness of themselves and their feelings by experiencing acceptance and empathy from therapists (Schottelkorb et al., 2015).

As CCPT appears to help increase children's awareness and regulation of emotions, and because ADHD symptoms decreased using CCPT as intervention in this study, it is believed that CCPT may be an effective intervention for children with ADHD.

Keeping in mind Bandura's model of reciprocal determinism as explained in Chapters 1 and 2, it would seem as though the CCPT input of a therapist, facilitating an experience where a child receives a different input from the environment than he or she might be used to, may bring about change in

self-influences like goalsetting, self-efficacy, attributions and self-esteem. In other words, the child may experience him or herself differently, as a person with agency. This may have led to changes in the children's behaviour as witnessed and reported by the respective teachers and parents. These changes in behaviour could have interacted with other social influences, like responses from others in the environment, with a circular, reciprocal, interactive, and hopefully ongoing, effect across all three of these domains and in all different directions.

5.4 LIMITATIONS OF THE STUDY

Readers are advised to interpret the findings of this study within the context of the following limitations:

An important limitation of this study was the time allocation. It would have been preferable if the intervention could have been carried out over a longer period (at least eight weeks rather than four).

The researcher initially planned to include a control group in the study. However, due to the small number of subjects available, it was decided to continue with the study without a control group. The reason for the benefit of a control group can be explained by reference to what is called the Hawthorne effect (Todd, 2012).

The Hawthorne effect is a term referring to the tendency of some people to work harder and perform better when they are subjects in an experiment. Individuals may change their behaviour due to the attention they are receiving from the researcher rather than because of any manipulation of independent variables. So, you need to control for that potential variable (p.47).

The sample of this study included five children formally diagnosed with ADHD, attending a specific school for children with physical and learning difficulties in the Western Cape. A group of children aged between eight and ten years was selected. Although the number of subjects is small, the sample is representative of the population as identified in this school. This aspect however limits the generalisability of the findings to all children with ADHD.

In this study, the Vanderbilt Rating Scales served as the only method for data analysis. The utilisation of multiple instruments could have strengthened the results.

The observers (parents and teachers) in this study had knowledge of the intervention. This could have led to their ratings of the subjects being biased.

The findings of this study are limited to what is assessed by the Vanderbilt Rating Scale. CCPT is a holistic intervention. Therefore, important information regarding treatment effect may not have been detected.

It is important to note that the intervention of CCPT only took place for four weeks. CCPT as an intervention is usually a long-term therapeutic approach. This may account for the upward trend during the baseline phase of the study. It is the hope that longer processes would lead to more lasting effects.

5.5 RECOMMENDATIONS FOR FUTURE RESEARCH AND INTERVENTIONS

The favourable findings of this study lead to the need for further research into the effectiveness of play therapy, specifically child-centered play therapy, as an intervention for reducing behavioural and emotional difficulties and increasing academic performance for children diagnosed with ADHD. A lack of empirical literature on the effects of CCPT or CCPT-based interventions with children in South Africa exists. Therefore, the following recommendations are suggested for future research:

1. There is a need for similar research with the potential of expanding upon the generalisability of the findings. Similar studies may be conducted with different age groups, for varying durations of time, and in alternative settings.
2. Studies that investigate the effectiveness of group play therapy with children diagnosed with ADHD who struggle with social interactions can be conducted.
3. A study that includes an intervention of CCPT that takes place over eight or more weeks can be conducted.
4. A randomised true experimental design (with a control group) study whereby independent observers are blind to the treatment group, should be conducted.
5. A mixed methods study that incorporates qualitative information, observations and opinions from the therapist, teachers and parents involved, can be conducted. This information can be gathered through interviews and focus group interviews.
6. A replication study to strengthen validity and reliability of results can be conducted.

Regarding interventions with children with the diagnoses of ADHD, it can be recommended tentatively that professional psychologists and counsellors may consider employing CCPT in supporting children with ADHD diagnoses on emotional and behavioural levels.

5.6 CONCLUSION

The theory of CCPT and its assumption that a caring, genuine and accepting therapeutic relationship can assist children diagnosed with ADHD move towards a more self-directed, self-controlled and self-accepting state of being guided this study (Landreth, 2002; Axline, 1947; Swan, 2011). The purpose of this study was to examine the effectiveness of CCPT on children previously diagnosed with ADHD. The results appear to support CCPT as an intervention for reducing behavioural and emotional difficulties and increasing academic performance for children diagnosed with ADHD. The findings demonstrated that the subjects' levels of inattention, hyperactivity/impulsivity, combined inattention and hyperactivity/impulsivity, defiance, low mood and anxiety and academic performance and behaviour decreased across conditions during or after an intervention of CCPT.

As mentioned previously, the findings of this study are in line with other experimental studies that showed the effectiveness of play therapy as an intervention for reducing children's externalised and internalised behaviours (Baggerly, 2004; Fall et al, 2002; Packman & Bratton, 2003; Raman & Kapur 1999; Swan, 2011; Blinn, 1999; Schottelkorb & Ray, 2009; Bratton, Ceballos, Sheely-Moore, Meany-Walen, Pronchenko, & Jones, 2013; Fall, Navelski, & Welch, 2002; Garza & Bratton, 2005; & Schumann, 2010). However, although the results of this study are promising, the nature of this study necessitates the need to conduct further CCPT based interventions with individuals diagnosed with ADHD.

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APPENDIX A
ETHICAL CLEARANCE



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jou kennisvenoot • your knowledge partner

Approval Notice

Stipulated documents/requirements

01-Jul-2016

Wall, Juante J

Proposal #: SU-HSD-002085

Title: **The Effectiveness of Child-Centered Play Therapy on Learners with Attention-Deficit/Hyperactivity Disorder**

Dear Ms Juante Wall,

Your Stipulated documents/requirements received on 23-Jun-2016, was reviewed and accepted.

Please note the following information about your approved research proposal:

Proposal Approval Period: 20-Jun-2016 - 19-Jun-2017

General comments:

Please take note of the general Investigator Responsibilities attached to this letter.

If the research deviates significantly from the undertaking that was made in the original application for research ethics

clearance to the REC and/or alters the risk/benefit profile of the study, the researcher must

undertake to notify the REC of these changes.

Please remember to use your proposal number (SU-HSD-002085) on any documents or correspondence with the REC concerning your research proposal.

Please note that the REC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki and the Guidelines for Ethical Research: Principles Structures and Processes 2015 (Department of Health). Annually a number of projects may be selected randomly for an external audit.

National Health Research Ethics Committee (NHREC) registration number REC-050411-032.

We wish you the best as you conduct your research.

If you have any questions or need further help, please contact the REC office at 218089183.

Sincerely,

Clarissa Graham

REC Coordinator

Research Ethics Committee: Human Research (Humanities)

Investigator Responsibilities

Protection of Human Research Participants

Some of the general responsibilities investigators have when conducting research involving human participants are listed below:

1. Conducting the Research. You are responsible for making sure that the research is conducted according to the REC approved research protocol. You are also responsible for the actions of all your co-investigators and research staff involved with this research. You must also ensure that the research is conducted within the standards of your field of research.

2. Participant Enrolment. You may not recruit or enroll participants prior to the REC approval

date or after the expiration date of REC approval. All recruitment materials for any form of media must be approved by the REC prior to their use. If you need to recruit more participants than was noted in your REC approval letter, you must submit an amendment requesting an increase in the number of participants.

3.Informed Consent. You are responsible for obtaining and documenting effective informed consent using only the REC-approved consent documents, and for ensuring that no human participants are involved in research prior to obtaining their informed consent. Please give all participants copies of the signed informed consent documents. Keep the originals in your secured research files for at least five (5) years.

4.Continuing Review. The REC must review and approve all REC-approved research proposals at intervals appropriate to the degree of risk but not less than once per year. There is no grace period. Prior to the date on which the REC approval of the research expires, it is your responsibility to submit the continuing review report in a timely fashion to ensure a lapse in REC approval does not occur. If REC approval of your research lapses, you must stop new participant enrolment, and contact the REC office immediately.

5.Amendments and Changes. If you wish to amend or change any aspect of your research (such as research design, interventions or procedures, number of participants, participant population, informed consent document, instruments, surveys or recruiting material), you must submit the amendment to the REC for review using the current Amendment Form. You may not initiate any amendments or changes to your research without first obtaining written REC review and approval. The only exception is when it is necessary to eliminate apparent immediate hazards to participants and the REC should be immediately informed of this necessity.

6.Adverse or Unanticipated Events. Any serious adverse events, participant complaints, and all unanticipated problems that involve risks to participants or others, as well as any research related injuries, occurring at this institution or at other performance sites must be reported to Malene Fouche within five (5) days of discovery of the incident. You must also report any instances of serious or continuing problems, or non-compliance with the RECs requirements for protecting human research participants. The only exception to this policy is that the death of a research participant must be reported in accordance with the Stellenbosch University Research Ethics Committee Standard Operating Procedures. All reportable events should be submitted to the REC using the Serious Adverse Event Report Form.

7.Research Record Keeping. You must keep the following research related records, at a minimum, in a secure location for a minimum of five years: the REC approved research proposal and all amendments; all informed consent documents; recruiting materials; continuing review reports; adverse or unanticipated events; and all correspondence from the REC

8.Provision of Counselling or emergency support. When a dedicated counsellor or psychologist provides support to a participant without prior REC review and approval, to the extent permitted by law, such activities will not be recognised as research nor the data used in support of research. Such cases should be indicated in the progress report or final report.

9. Final reports. When you have completed (no further participant enrolment, interactions, interventions or data analysis) or stopped work on your research, you must submit a Final Report to the REC.

10. On-Site Evaluations, Inspections, or Audits. If you are notified that your research will be reviewed or audited by the sponsor or any other external agency or any internal group, you must inform the REC immediately of the impending audit/evaluation.

APPENDIX B**WCED RESEARCH APPROVAL**

REFERENCE: 20160224-8106

ENQUIRIES: Dr A T Wyngaard

Ms Juante Wall



Dear Ms Juante Wall

RESEARCH PROPOSAL: THE EFFECTIVENESS OF CHILD-CENTERED PLAY THERAPY ON LEARNERS WITH ATTENTION-DEFICIT / HYPERACTIVITY DISORDER

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **11 July 2016 till 30 September 2016**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

**The Director: Research Services
Western Cape Education Department
Private Bag X9114
CAPE TOWN
8000**

We wish you success in your research.

Kind regards.

Signed: Dr Audrey T Wyngaard

Directorate: Research

DATE: 24 February 2016

APPENDIX C

PRINCIPAL CONSENT FORM

Dear [REDACTED],

I am writing to you to ask permission to do research for my thesis in 2016 within [REDACTED]. I am a student at Stellenbosch University and am studying a Masters in Educational Psychology degree. The title of the study I would like to do within [REDACTED] is: The Effectiveness of Child-Centered Play Therapy on children with Attention-Deficit/Hyperactivity Disorder. This study aims to uncover whether Child-Centered Play Therapy (CCPT) is effective in treating Attention-Deficit/Hyperactivity Disorder (ADHD) in learners aged eight to ten. There is a need for an alternative treatment to traditional therapies and medication when it comes to ADHD. Multiple studies worldwide have shown that CCPT could be effective in treating problem behaviours and ADHD in children. However, there is a lack of such studies done within South Africa.

Children who have been diagnosed with ADHD and fall within the age range will be invited to participate in the study. Parents of children as well as the children will be asked to consent to participating in the study. The sample for the study will be made up of the children who have agreed to participate. All children involved in the study will be allowed to choose a pseudonym in order to ensure anonymity. The children will take part in the intervention of CCPT. The study will span over eight weeks and will consist of three phases. The first phase will be a two-week no-intervention phase, the second phase will consist of four weeks of play therapy twice a week, and, finally, two weeks of a no-intervention maintenance phase. Teachers will use the Vanderbilt ADHD Rating Scale (VADRS) to rate subjects' behaviour weekly throughout the course of the study. Additionally parents will also complete the VADRS during two intervals: baseline phase, and maintenance phase. Results from this testing will then be analyzed to see if the scores have improved over the course of the intervention.

As my role is the researcher I will not be doing the therapy myself. [REDACTED], who will be an intern at [REDACTED] has agreed to doing the therapy under the supervision of Educational Psychologists [REDACTED] and [REDACTED]. This would all take place within the third term of 2016.

If you agree to the above **please complete the attached form on a [REDACTED] letterhead.**

I look forward to the possibility of doing this study at [REDACTED].

Kind regards,

Juante Wall

10 February 2016

I, [REDACTED], principal of [REDACTED] hereby consent voluntarily to allow Juante Wall to do research on "The Effectiveness of Child-Centered Play Therapy on Children with Attention-Deficit/Hyperactivity Disorder" at [REDACTED] in 2016.

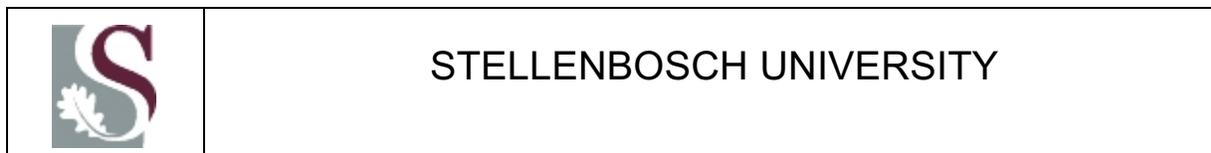
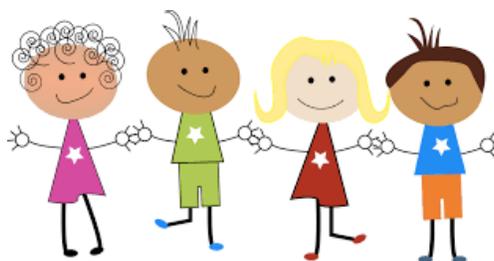
[REDACTED]

Signature

[Handwritten signature]

2016/02/10

Date

APPENDIX D**SUBJECT ASSENT FORM****PARTICIPANT INFORMATION LEAFLET AND ASSENT FORM**

TITLE OF THE RESEARCH PROJECT: The Effectiveness of Child-Centered Play Therapy on Learners with Attention-Deficit/Hyperactivity Disorder

RESEARCHERS NAME: Juante Wall

EMAIL ADDRESS: juante.wall@gmail.com

CONTACT NUMBER: 0835655678

What is RESEARCH?

Research is something we do to find **NEW KNOWLEDGE** about the way things (and people) work. We use research projects or studies to help us find out more about children and teenagers and the things that affect their lives, their schools, their families and their health. We do this to try and make the world a better place for all!

What is this research project all about?

If you have a broken arm or a bad cold, you go to the doctor for help and to feel better, right? Well, sometimes children and adults have trouble that can't be seen as easily as a broken bone or a runny nose. When people have trouble with emotions or behaviour, sometimes they see a therapist to get

help. Therapists can work with children to help understand feelings, take care of problems, and cope with difficult situations. A therapist's job is to help kids do better and feel better.

This research is about a type of therapy called Child-Centred Play Therapy. In this therapy the child is the most important person in the room. Child-Centred Play Therapy takes place in a playroom. This time in the playroom with the therapist is a very special time where the child is allowed to play in special ways. This type of therapy can be very good for children and can sometimes help them to better control how they behave at school and at home.

What I would like to see is if Child-Centred Play Therapy can help better behaviour and emotions (how you feel) of children who are between 8 and 10 years old and who have been diagnosed with Attention-Deficit/Hyperactivity Disorder.

Why have I been invited to take part in this research project?

You have been invited to take part in this research project because you are exactly the right age (between 8 and 10), you have been diagnosed with ADHD and you are taking some type of medicine to help you with the ADHD.

Who is doing the research?

My name is Juante and I will be doing the research for the project. I am a university student from Stellenbosch University who is studying to be a psychologist (say: sy-kol-uh-jist). That is a fancier name for a therapist. This research will help me get my degree and graduate.

What will happen to me in this study?

In this study you will be able to have a special time to play with a therapist. This special time will happen in a playroom at your school for 4 weeks in the third term.

Can anything bad happen to me?

I know spending time with someone you don't know can sometimes be a bit scary but you will not have to do anything you do not want to do. You will be in charge of deciding what happens in the playroom.

Can anything good happen to me?

Taking part in the therapy for this research might help you to control your behaviour and emotions in class and at home.

Will anyone know I am in the study?

The only people who will know you are in the study are: you, your parents/guardians, your teacher, the therapist and the school psychologists and me, the researcher. You will even be allowed to choose a new name that I can use when I write about what happened in the research project. This new name is called a pseudonym (say: su-do-nim).

Who can I talk to about the study?

If you would like to talk to someone to find out more about the study you can talk to:

Main researcher – Juante Wall
Email: juante.wall@gmail.com
Cell: 083 565 5678

Supervisor – Mariechen Perold
Email: mdperold@sun.ac.za
Tel: (021) 808 2307

What if I do not want to do this?

It is important to remember that you do not have to take part in the study. If you do not want to do it then you do not have to. If you do want to you must remember that you can stop being in the study at any time without getting in trouble.

Do you understand this research study and are you willing to take part in it? YES NO**Has the researcher answered all your questions?** YES NO**Do you understand that you can STOP being in the study at any time?** YES NO

Signature of Child

Date

APPENDIX E

PARENT CONSENT FORM



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jou kennisvenoot • your knowledge partner

STELLENBOSCH UNIVERSITY CONSENT TO PARTICIPATE IN RESEARCH

The Effectiveness of Child-Centered Play Therapy on Learners with Attention-Deficit/Hyperactivity Disorder

Parental Consent

Your child is asked to participate in a research study conducted by Juante Wall, from the Department of Educational Psychology at Stellenbosch University. Your child was selected as a possible participant in this study because he/she is in [REDACTED], has been diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD) and falls within the age group of 8 to 10 years.

1. PURPOSE OF THE STUDY

The aim of this study is to examine the effectiveness of Child-Centered Play Therapy (CCPT) as an intervention that reduces behavioural and emotional difficulties among children diagnosed with ADHD.

2. PROCEDURES

If your child volunteers to participate in this study, I would have him/her to do the following things:

Take part in an intervention of CCPT in the third term of 2016. The intervention will run over 4 weeks, with two therapy sessions per week. Sessions will be held at [REDACTED]. The therapy will be done by the intern psychologist, [REDACTED], under the supervision of the two educational psychologists at the school, [REDACTED].

You, as the parent, will be asked to fill out a questionnaire called the Vanderbilt ADHD Rating Scales (VADRS) assessing your child's behaviour and emotion once a week for the two weeks before and after the intervention (4 weeks in total). Should you require any feedback regarding the therapeutic processes during the 5 week period of intervention you may contact the supervising educational psychologists at [REDACTED].

Teachers will fill out the questionnaire once a week for the entire duration of the study (9 weeks in total).

3. POTENTIAL RISKS AND DISCOMFORTS

The researcher does not foresee any potential risks, however, if your child were to react negatively to the therapy sessions, the educational psychologists at the school will be ready to step in and provide the support needed.

4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

Children will have the opportunity to benefit from CCPT sessions. During CCPT, children learn to discover their inner strengths and become more self-accepting, self-reliant and self-directing. This can have a positive impact on the behaviour and emotional state of a child.

5. PAYMENT FOR PARTICIPATION

There is no payment for participation in this study.

6. CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you or your child will remain confidential and will be disclosed only with your permission or as required by law.

Confidentiality will be maintained in the following way: All therapy sessions will be conducted in the play therapy room [REDACTED]. No one other than the therapist, supervisor, and child will be involved in the therapy. The researcher will discuss what has happened in therapy. This will insure that all sessions stay confidential. Pseudonyms will be given to all individuals involved. These pseudonyms will be used on all VADRS forms as well as in this research thesis. This will insure that the subjects, parents and teachers will remain anonymous. Although no documents will contain the actual names of individual involved, steps will be still be taken to make sure they are not accessible to the public. All electronic documents will be kept in a password-protected file and all hardcopies will be kept in a locked cabinet. When results of the study are published only pseudonyms will be used. This will insure that the children involved will remain anonymous.

The results of the study will be communicated with the school as well as the parents of the subjects. Confidentiality will be maintained when communicating the results.

7. PARTICIPATION AND WITHDRAWAL

You can choose whether you would like your child to be in this study or not. If you allow your child to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw your child from this research if circumstances arise which warrant doing so.

8. IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about the research, please feel free to contact:

Principal Investigator – Juante Wall

Email: juante.wall@gmail.com

Tel: (021) 422 2820

Cell: 083 565 5678

Supervisor – Mariechen Perold

Email: mdperold@sun.ac.za

Tel: (021) 808 2307

9. RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue your child's participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research subject, contact Ms Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development.

SIGNATURE OF RESEARCH SUBJECT OR LEGAL REPRESENTATIVE

The information above was described to [*me/the subject/the participant*] by _____ in [*Afrikaans/English/Xhosa/other*] and [*I am/the subject is/the participant is*] in command of this language or it was satisfactorily translated to [*me/him/her*]. [*I/the participant/the subject*] was given the opportunity to ask questions and these questions were answered to [*my/his/her*] satisfaction.

[*I hereby consent voluntarily to participate in this study/I hereby consent that the subject/participant may participate in this study.*] I have been given a copy of this form.

Name of Subject/Participant

Name of Legal Representative (if applicable)

Signature of Subject/Participant or Legal Representative

Date

SIGNATURE OF INVESTIGATOR

I declare that I explained the information given in this document to _____ [*name of the subject/participant*] and/or [*his/her*] representative _____ [*name of the*

representative]. [He/she] was encouraged and given ample time to ask me any questions. This conversation was conducted in [Afrikaans/*English/*Xhosa/*Other] and [no translator was used/this conversation was translated into _____ by _____].

Signature of Investigator

Date

APPENDIX F**VANDERBILT ADHD TEACHER RATING SCALE**

Today's Date: _____ Child's Name: _____ Grade Level:

Teacher's Name: _____

Directions: Each rating should be considered in the context of what is appropriate for the age of the child.

When completing this form, please think about the child's behaviors in the past week.

Is this evaluation based on a time when the child _ was on medication _ was not on medication _ not sure?

Symptoms: Never, Occasionally, Often, Very Often

- | | |
|--|---------|
| 1. Fails to give attention to details or makes careless mistakes in schoolwork | 0 1 2 3 |
| 2. Has difficulty sustaining attention to tasks or activities | 0 1 2 3 |
| 3. Does not seem to listen when spoken to directly | 0 1 2 3 |
| 4. Does not follow through on instructions and fails to finish schoolwork | 0 1 2 3 |
| 5. Has difficulty organizing tasks and activities | 0 1 2 3 |
| 6. Avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort | 0 1 2 3 |
| 7. Loses things necessary for tasks or activities (school assignments, pencils, or books) | 0 1 2 3 |
| 8. Is easily distracted by extraneous stimuli | 0 1 2 3 |
| 9. Is forgetful in daily activities | 0 1 2 3 |
| 10. Fidgets with hands or feet or squirms in seat | 0 1 2 3 |
| 11. Leaves seat in classroom or in other situations in which remaining seated is expected | 0 1 2 3 |
| 12. Runs about or climbs excessively in situations in which remaining seated is expected | 0 1 2 3 |
| 13. Has difficulty playing or engaging in leisure activities quietly | 0 1 2 3 |
| 14. Is "on the go" or often acts as if "driven by a motor" | 0 1 2 3 |
| 15. Talks excessively | 0 1 2 3 |
| 16. Blurts out answers before questions have been completed | 0 1 2 3 |
| 17. Has difficulty waiting in line | 0 1 2 3 |
| 18. Interrupts or intrudes on others (eg, butts into conversations/games) | 0 1 2 3 |
| 19. Loses temper | 0 1 2 3 |
| 20. Actively defies or refuses to comply with adult's requests or rules | 0 1 2 3 |
| 21. Is angry or resentful | 0 1 2 3 |
| 22. Is spiteful and vindictive | 0 1 2 3 |
| 23. Bullies, threatens, or intimidates others | 0 1 2 3 |
| 24. Initiates physical fights | 0 1 2 3 |
| 25. Lies to obtain goods for favors or to avoid obligations (e.g., "cons" others) | 0 1 2 3 |
| 26. Is physically cruel to people | 0 1 2 3 |
| 27. Has stolen items of nontrivial value | 0 1 2 3 |
| 28. Deliberately destroys others' property | 0 1 2 3 |
| 29. Is fearful, anxious, or worried | 0 1 2 3 |

- | | |
|--|---------|
| 30. Is self-conscious or easily embarrassed | 0 1 2 3 |
| 31. Is afraid to try new things for fear of making mistakes | 0 1 2 3 |
| 32. Feels worthless or inferior | 0 1 2 3 |
| 33. Blames self for problems; feels guilty | 0 1 2 3 |
| 34. Feels lonely, unwanted, or unloved; complains that “no one loves him or her” | 0 1 2 3 |
| 35. Is sad, unhappy, or depressed | 0 1 2 3 |

Performance: Excellent, Above Average, Average, Somewhat of a Problem, Problematic

- | | |
|------------------------|-----------|
| 36. Reading | 1 2 3 4 5 |
| 37. Mathematics | 1 2 3 4 5 |
| 38. Written expression | 1 2 3 4 5 |

Performance: Excellent, Above Average, Average, Somewhat of a Problem, Problematic

- | | |
|-----------------------------|-----------|
| 39. Relationship with peers | 1 2 3 4 5 |
| 40. Following directions | 1 2 3 4 5 |
| 41. Disrupting class | 1 2 3 4 5 |
| 42. Assignment completion | 1 2 3 4 5 |
| 43. Organizational skills | 1 2 3 4 5 |

Comments:

APPENDIX G**VANDERBILT ADHD PARENT RATING SCALE**

Today's Date: _____ Child's Name: _____ Date of Birth: _____

Parent's Name: _____ Parent's Phone Number: _____

Directions: Each rating should be considered in the context of what is appropriate for the age of your child.

When completing this form, please think about your child's behaviors in the past week.

Is this evaluation based on a time when the child _ was on medication _ was not on medication _ not sure?

Symptoms: Never, Occasionally, Often, Very Often

- | | |
|---|---------|
| 1. Does not pay attention to details or makes careless mistakes with, for example, homework | 0 1 2 3 |
| 2. Has difficulty keeping attention to what needs to be done | 0 1 2 3 |
| 3. Does not seem to listen when spoken to directly | 0 1 2 3 |
| 4. Does not follow through when given directions and fails to finish activities | 0 1 2 3 |
| 5. Has difficulty organizing tasks and activities | 0 1 2 3 |
| 6. Avoids, dislikes, or does not want to start tasks that require ongoing mental effort | 0 1 2 3 |
| 7. Loses things necessary for tasks or activities (toys, assignments, pencils, or books) | 0 1 2 3 |
| 8. Is easily distracted by noises or other stimuli | 0 1 2 3 |
| 9. Is forgetful in daily activities | 0 1 2 3 |
| 10. Fidgets with hands or feet or squirms in seat | 0 1 2 3 |
| 11. Leaves seat when remaining seated is expected | 0 1 2 3 |
| 12. Runs about or climbs too much when remaining seated is expected | 0 1 2 3 |
| 13. Has difficulty playing or beginning quiet play activities | 0 1 2 3 |
| 14. Is "on the go" or often acts as if "driven by a motor" | 0 1 2 3 |
| 15. Talks too much | 0 1 2 3 |
| 16. Blurts out answers before questions have been completed | 0 1 2 3 |
| 17. Has difficulty waiting his or her turn | 0 1 2 3 |
| 18. Interrupts or intrudes in on others' conversations and/or activities | 0 1 2 3 |
| 19. Argues with adults | 0 1 2 3 |
| 20. Loses temper | 0 1 2 3 |
| 21. Actively defies or refuses to go along with adults' requests or rules | 0 1 2 3 |
| 22. Deliberately annoys people | 0 1 2 3 |
| 23. Blames others for his or her mistakes or misbehaviors | 0 1 2 3 |
| 24. Is touchy or easily annoyed by others | 0 1 2 3 |
| 25. Is angry or resentful | 0 1 2 3 |
| 26. Is spiteful and wants to get even | 0 1 2 3 |

27. Bullies, threatens, or intimidates others	0 1 2 3
28. Starts physical fights	0 1 2 3
29. Lies to get out of trouble or to avoid obligations (i.e., “cons” others)	0 1 2 3
30. Is truant from school (skips school) without permission	0 1 2 3
31. Is physically cruel to people	0 1 2 3
32. Has stolen things that have value	0 1 2 3
33. Deliberately destroys others’ property	0 1 2 3
34. Has used a weapon that can cause serious harm (bat, knife, brick, gun)	0 1 2 3
35. Is physically cruel to animals	0 1 2 3
36. Has deliberately set fires to cause damage	0 1 2 3
37. Has broken into someone else’s home, business, or car	0 1 2 3

Symptoms (continued) Never Occasionally Often Very Often

38. Has stayed out at night without permission	0 1 2 3
39. Has run away from home overnight	0 1 2 3
40. Has forced someone into sexual activity	0 1 2 3
41. Is fearful, anxious, or worried	0 1 2 3
42. Is afraid to try new things for fear of making mistakes	0 1 2 3
43. Feels worthless or inferior	0 1 2 3
44. Blames self for problems, feels guilty	0 1 2 3
45. Feels lonely, unwanted, or unloved; complains that “no one loves him or her”	0 1 2 3
46. Is sad, unhappy, or depressed	0 1 2 3
47. Is self-conscious or easily embarrassed	0 1 2 3

Performance: Excellent, Above Average, Average, Somewhat of a Problem, Problematic

48. Overall school performance	1 2 3 4 5
49. Reading	1 2 3 4 5
50. Writing	1 2 3 4 5
51. Mathematics	1 2 3 4 5
52. Relationship with parents	1 2 3 4 5
53. Relationship with siblings	1 2 3 4 5
54. Relationship with peers	1 2 3 4 5
55. Participation in organized activities (eg, teams)	1 2 3 4 5

Comments:

APPENDIX H

SYMPTOM CHECKLIST

Is your child reacting negatively to therapy?

To assess whether a child may be reacting negatively to therapy sessions it is important to look out for **symptoms that were not present prior to therapy** but are now and/or **symptoms that have worsened since the start of therapy**. Symptoms to be on the lookout for are:

Emotional	Behavioural
<ul style="list-style-type: none"> ✓ Irritability or anger ✓ Continuous feelings of sadness and hopelessness ✓ Feelings of worthlessness or guilt ✓ Excessive worry most days of the week 	<ul style="list-style-type: none"> ✓ Social withdrawal ✓ Vocal outbursts or crying ✓ Difficulty concentrating ✓ Reduced ability to function during events and activities at home or with friends, in school, extracurricular activities, and in other hobbies or interests
<h4>Physical</h4> <ul style="list-style-type: none"> ✓ Complaints, such as stomach-aches and headaches, that don't respond to treatment ✓ Fatigue and low energy ✓ Changes in appetite - either increased or decreased ✓ Changes in sleep - sleeplessness or excessive sleep 	

APPENDIX I

DATA SUMMARIES

RESULTS FROM INTERVENTION

The higher the number the more severe the symptom (lower number = positive change)

Participant 1

Teacher						
	Inattention	Hyperactivity/ Impulsivity	Combined	Defiance	Low mood/ Anxiety	Academic Performance & Behaviour
1. Baseline	5	0	18	0	3	4
2. Baseline	5	0	17	0	3	4
3. Intervention	6	5	26	1	1	4
4. Intervention	3	0	13	0	0	4
5. Intervention	2	0	8	0	0	4
6. Intervention	2	0	9	0	0	3
7. Maintenance	1	0	5	0	0	4
8. Maintenance	0	0	4	0	0	4

Parent						
	Inattention	Hyperactivity/ Impulsivity	Combined	Defiance	Low mood/ Anxiety	Academic Performance & Interpersonal relationships
1. Baseline	8	10	48	8	2	4
2. Baseline	8	10	48	8	2	4
7. Maintenance	2	0	8	1	0	3
8. Maintenance	3	0	9	1	0	4

Participant 2

Teacher						
	Inattention	Hyperactivity/ Impulsivity	Combined	Defiance	Low mood/ Anxiety	Academic Performance & Behaviour
1. Baseline	9	10	40	5	7	3
2. Baseline	9	10	48	10	7	7
3. Intervention	9	6	40	3	4	6
4. Intervention	9	10	37	3	0	3
5. Intervention	9	10	39	3	4	0
6. Intervention	9	5	28	5	4	5
7. Maintenance	9	10	40	0	0	4
8. Maintenance	9	10	54	3	2	6

Parent						
	Inattention	Hyperactivity/ Impulsivity	Combined	Defiance	Low mood/ Anxiety	Academic Performance & Interpersonal relationships
1. Baseline	6	10	43	6	2	2
2. Baseline	9	9	42	9	2	2
7. Maintenance	6	5	32	0	0	0
8. Maintenance	7	8	41	5	0	0

Participant 3

Teacher						
	Inattention	Hyperactivity/ Impulsivity	Combined	Defiance	Low mood/ Anxiety	Academic Performance & Classroom behaviour
1. Baseline	8	10	38	4	7	2
2. Baseline	9	10	38	4	6	2
3. Intervention	4	7	31	3	6	3
4. Intervention	4	7	30	3	6	3
5. Intervention	2	5	25	2	4	1
6. Intervention	3	7	25	2	4	0
7. Maintenance	6	8	32	2	4	0
8. Maintenance	6	8	31	3	6	0

Parent						
	Inattention	Hyperactivity/ Impulsivity	Combined	Defiance	Low mood/ Anxiety	Academic Performance & Interpersonal relationships
1. Baseline	6	6	36	3	6	2
2. Baseline	6	6	32	3	6	2
7. Maintenance	3	3	25	0	3	0
8. Maintenance	2	3	24	0	3	2

Participant 4

Teacher						
	Inattention	Hyperactivity/ Impulsivity	Combined	Defiance	Low mood/ Anxiety	Academic Performance & Classroom behaviour
1. Baseline	8	3	36	2	3	6
2. Baseline	8	3	36	2	3	6
3. Intervention	7	3	33	1	2	6
4. Intervention	7	3	35	1	2	5
5. Intervention	6	3	29	1	2	5
6. Intervention	7	2	30	2	2	5
7. Maintenance	7	2	31	1	2	5
8. Maintenance	7	2	29	2	3	5

Parent						
	Inattention	Hyperactivity/ Impulsivity	Combined	Defiance	Low mood/ Anxiety	Academic Performance & Interpersonal relationships
1. Baseline	8	7	39	5	6	4
2. Baseline	8	6	33	5	6	4
7. Maintenance	0	0	18	0	5	1
8. Maintenance	0	0	18	1	4	1

Participant 5

Teacher						
	Inattention	Hyperactivity/ Impulsivity	Combined	Defiance	Low mood/ Anxiety	Academic Performance & Classroom behaviour
1. Baseline	9	10	54	6	7	6
2. Baseline	9	10	48	6	7	7
3. Intervention	9	10	40	3	4	6
4. Intervention	9	10	38	3	4	5
5. Intervention	9	10	39	2	4	0
6. Intervention	9	7	28	2	0	0
7. Maintenance	9	7	34	1	0	3
8. Maintenance	9	10	45	4	2	4

Parent						
	Inattention	Hyperactivity/ Impulsivity	Combined	Defiance	Low mood/ Anxiety	Academic Performance & Interpersonal relationships
1. Baseline	9	9	42	11	4	4
2. Baseline	9	10	48	11	4	4
7. Maintenance	7	5	34	0	2	2
8. Maintenance	7	9	39	5	3	2