PILOT STUDY OF THE EFFECTIVENESS OF THE FRIENDS-PROGRAMME IN A SOUTH AFRICAN SAMPLE

JACOMINA JEMONA MOSTERT

Thesis presented in partial fulfillment of the requirements for the degree of Master of Science (Psychology) at the University of Stellenbosch.
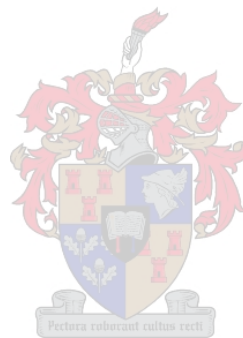
Supervisor: Dr. H.S. Loxton

March 2007

DECLARATION

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.
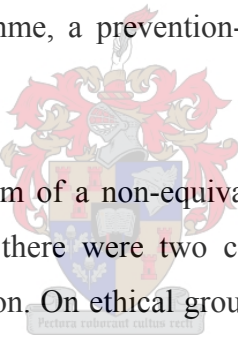
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ABSTRACT

Anxiety symptoms seem highly prevalent amongst South African children, as recent studies indicate. Even though early intervention and prevention is advocated, an effective prevention- and early intervention programme for childhood anxiety is lacking for the South African context. Therefore, the present study was motivated from the need for an effective anxiety prevention- and early intervention programme for use with South African children. Thus the primary aim of the present study was to determine whether the Australian FRIENDS programme could effectively reduce the anxiety symptoms in a sample of South African children. In addition, literature also suggests self-efficacy to have a unique contribution in the etiology of anxiety. The question has also been raised in literature whether the effectiveness of childhood anxiety interventions cannot be ascribed to the enhancement of self-efficacy for dealing with feared stimuli. Thus, as a sub-aim the study explored whether the FRIENDS programme could effectively enhance the self-efficacy of the sample. Hence, for the present pilot study, a programme evaluation was conducted into the effectiveness of the FRIENDS programme, a prevention- and early intervention programme for childhood anxiety.

A quasi-experimental design, in the form of a non-equivalent wait-list comparison group design, was used in the present study. Thus, there were two conditions to the study: an intervention condition and a wait-list control condition. On ethical grounds, both the intervention group and the wait-list control group received the intervention during the course of the study. An *ad hoc* sample was drawn from an accessible population of 12-year-old children. This resulted in 66 children (30 girls, 36 boys) from a formerly disadvantaged neighbourhood in the Stellenbosch area participating in the study. The study followed participants over a course of 10 months during which participants' anxiety symptoms and self-efficacy were assessed at four occasions. The intervention programme, the "FRIENDS" programme that is a 10-session Cognitive Behaviour Therapy prevention- and early intervention programme for childhood anxiety, was conducted firstly with the intervention group and lastly with the wait-list control group. To assess participants' anxiety symptoms, two self-report anxiety questionnaires, the Spence Children's Anxiety Scale (SCAS) and the Revised Children's Manifest Anxiety Scale (RCMAS) were used. Participants' self-efficacy was assessed with a self-report questionnaire, the Self-Efficacy Questionnaire for Children (SEQ-C).

The data of 46 participants were used in the analysis of the data that explored both *between group* effects and *within group* effects. The between group effects were analysed using one-way

ANOVA's, and within group effects were analyzed using repeated measures ANOVA's. Regarding the *between group* effects, results indicated no significant difference between the intervention group and the wait-list control group on either the measures of anxiety or the measure of self-efficacy at any four times of assessment. Regarding the *within group* effects, results indicated a significant effect for time for the intervention group on the SCAS data, however the same effect was not found for the wait-list control group. Also, no significant within group effects were found for either group on the RCMAS data or the SEQ-C data. The implications of these findings, with regard to the effectiveness of the FRIENDS programme, are discussed in addition to a discussion of the limitations of the present study and the recommendations for further research.
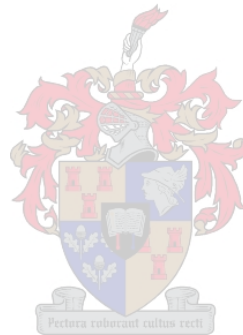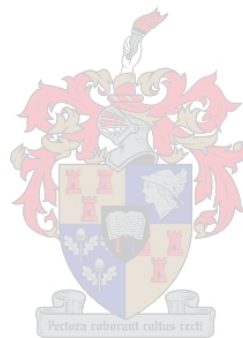
OPSOMMING

Angssimptome het skynbaar 'n hoë voorkoms onder Suid-Afrikaanse kinders, soos blyk uit onlangse studies. Alhoewel voorkoming en vroeë ingryping bepleit word, is geen voorkomings- en vroeë ingrypingsprogram beskikbaar vir die Suid-Afrikaanse konteks nie. Vervolgens was die huidige studie gemotiveer vanuit die die behoefte aan 'n effektiewe angsvoorkomings- en vroeë ingrypingsprogram vir gebruik binne die Suid-Afrikaanse konteks. Dus was die primêre doelwit van die studie om te bepaal of die Australiese "FRIENDS" program die angssimptome van 'n steekproef van Suid-Afrikaanse kinders effektief kan verlaag. Verder blyk dit vanuit die literatuur dat self-effektiwiteit 'n unieke bydrae tot die etiologie van angs het. Die vraag is ook in die literatuur opgehaal of die effektiwiteit van angsintervensies vir kinders nie toegeskryf kan word aan die bevordering van self-effektiwiteit in die hantering van gevreesde stimuli nie. Vervolgens was die sub-doelwit van die studie om te bepaal of die "FRIENDS" program die self-effektiwiteit van die steekproef effektief kan bevorder. Dus is 'n programevaluering oor die effektiwiteit van die "FRIENDS" program uitgevoer in die huidige loddsstudie.

'n Kwasi-eksperimentele ontwerp, in die vorm van 'n nie-ekwivalente waglys-vergelykingsgroep ontwerp is gebruik in die huidige studie. Dus was daar twee toestande in die studie: 'n intervensietoestand en 'n waglys-kontroletoestand. As gevolg van etiese oorwegings het beide die intervensiegroep en die waglys-kontrolegroep die intervensie ontvang tydens die verloop van die studie. 'n Gerieflikheidssteekproef is getrek uit die beskikbare populasie van 12-jarige kinders. Gevolglik het 66 kinders (30 dogters, 36 seuns), van 'n voorheen-benadeelde gemeenskap in die Stellenbosch omgewing, deelgeneem aan die studie. Deelnemers is gevolg oor 'n tydperk van 10 maande, waartydens die angssimptome en self-effektiwiteit van deelnemers by vier geleenthede geassesseer is. Die intervensieprogram, die "FRIENDS" program, wat 'n 10-sessie Kognitiewe-gedragsterapie voorkomings- en vroeë ingrypingsprogram vir kinders met angssimptome is, is eers toegepas op die intervensiegroep waarna die waglys-kontrolegroep die intervensie ontvang het. Twee self-rapporteringsvraelyste vir angs, die "Spence Children's Anxiety Scale" (SCAS) en die "Revised Children's Manifest Anxiety Scale" (RCMAS), is gebruik om die angssimptome van die deelnemers te assesseer. Die self-effektiwiteit van deelnemers is geassesseer met behulp van 'n self-rapporteer vraelys, die "Self-Efficacy Questionnaire for Children" (SEQ-C).

Die data van 46 deelnemers is gebruik vir data-analise waartydens *tussen-groep* effekte en b*inne-groep* effekte verken is. Die tussen-groep effekte is analiseer deur middel van eenrigting ANOVA's

terwyl binne-groep effekte analiseer is deur middel van herhaalde meting ANOVA's. Met betrekking tot *tussen-groep* effekte, het resultate aangedui dat daar geen beduidende verskille tussen die intervensiegroep en die waglys-kontrolegroep, tydens enige van die vier assesseringstye, op die maatstawwe van angssimptome of self-effektiwiteit was nie. Met betrekking tot *binne-groep* verskille, het resultate 'n beduidende effek vir tyd aangetoon vir die intervensiegroep op die SCAS data, hoewel dieselfde effek nie vir die waglys-kontrolegroep gevind is nie. Verder, is daar geen beduidende binne-groep effekte gevind vir enige van die twee groepe met betrekking tot RCMAS data of SEQ-C data nie. Die implikasies van hierdie bevindinge, met betrekking tot die effektiwiteit van die "FRIENDS' program, word bespreek bo en behalwe die beperkings van die huidige studie, asook die aanbevelings vir verdere navorsing.
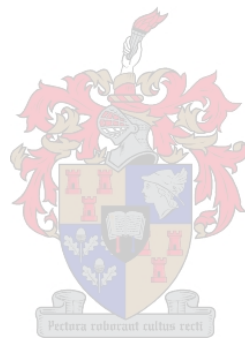
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CHAPTER 1

INTRODUCTION

1.1 General introduction and statement of the research problem on childhood anxiety

Anxiety disorders are regarded as one of the most prevalent psychological disorders (Stein, 2004), with a 12-month prevalence rate of about 17% (Sadock & Sadock, 2003). The prevalence rate of childhood anxiety varies from as little as 10% to as much as 21% (Kashani & Orvaschel, 1990), internationally.

Anxiety disorders refer to a cluster of mental disorders that have a common denominator: anxiety. *Anxiety* could be defined as an indistinct and unpleasant feeling of uneasiness that is often accompanied by bodily symptoms. In the presence of imminent danger (e.g. a car speeding towards one) one would experience these sensations that are believed to be normal or adaptive. In the case of anxiety disorders, these sensations (anxiety) are experienced in the absence of any present danger. Another important distinction between normal anxiety and anxiety disorders should be made: in the latter case, anxiety creates distress and impairment of normal, daily functioning (Sadock & Sadock, 2003). Thus some anxiety is needed for optimum functioning, but excessive anxiety interferes with daily functioning (Mash & Wolfe, 2002).

Commonly, children that experience problems with anxiety continue having symptoms in adulthood (Mash & Wolfe, 2002). Put differently, the onset of many adult anxiety disorders may be traced back to childhood (Vasey & Dadds, 2001). Some common comorbid conditions that occur with childhood anxiety disorders are school refusal, depression, substance-use disorders, somatic complaints and low self-esteem. Anxiety could also limit children's social adjustment and academic performance (Mash & Wolfe).

Considering the vast prevalence of childhood anxiety and the profound impact it has, efforts should be made to prevent the onset of full-blown anxiety disorders in children. According to the World Health Organization (2004), strategies for the prevention of mental disorders are an important ally in reaching its goal of reducing the burden of mental disorders. Therefore, it becomes clear that identification of at-risk children and intervening during childhood, for anxiety, is imperative.

Several studies about childhood anxiety and the treatment thereof have been conducted. Yet, an effective prevention and early intervention programme for South African children seems to be lacking (Loxton, 2004). Extensive research has been done by Dr Paula Barrett of Australia on the treatment of childhood anxiety based on the FRIENDS programme – a prevention and early intervention programme for childhood anxiety and depression. (Barrett, 2004). The programme, which has been implemented in Australia with great success, focuses on enhancing children's emotional resilience and teaching children the necessary coping skills to deal with anxiety effectively. (Barrett, Webster, Turner, & May, 2003). The question may be posed whether the FRIENDS programme would be as successful in reducing childhood anxiety symptoms within the South African context.

Emerging from recent literature is the relationship between self-efficacy and emotional disorders (Muris, 2002; Nevid, Rathus, & Greene, 2000). Self-efficacy refers to a person's perception of his/her ability to competently use certain skills or perform certain behaviour to meet situational expectations (Bandura, 1997). Given the association between self-efficacy and anxiety symptoms, Muris proposed that the success of intervention programmes for anxiety symptoms might lie in the fact that it raises children's self-efficacy that, in turn, reduces anxiety. Thus a second question is raised: does the FRIENDS programme enhance children's self-efficacy?

With the void in the South African literature in mind, the current study, therefore, wished to explore the effectiveness of the FRIENDS programme in reducing anxiety symptoms and enhancing self-efficacy in a sample of South African children.

1.2   Motivation for and relevance of the study

South African literature emphasises the high prevalence of childhood anxiety (Burkhardt, Loxton, & Muris, 2003; Muris, et al., 2006; Muris, Schmidt, Engelbrecht, & Perold, 2002; Perold, 2001) and the lack of an intervention programme (Loxton, 2004). Furthermore, prevention programmes for young children that could help them gain helpful skills to cope with anxiety later on, thereby preventing the possible onset of an anxiety disorder. Importantly, maladaptive behaviours in young children can be more readily replaced by more adaptive ways of coping than in older children or adults (Hirshfeld-Becker & Biederman, 2002), which, once more, emphasises the need for prevention- and early intervention with childhood anxiety. Thus the motivation of the study stems from the need to find an effective prevention and early intervention programme for childhood anxiety that would be both applicable to the South African context, and able to reach large groups of children.

Given that previous findings indicate a high incidence of anxiety symptoms in South African children, the findings of the current study have *scientific relevance* by empirically exploring the effectiveness of an anxiety prevention programme in reducing children's anxiety symptoms.

Secondly, given the social context of participants in the present study, the study is *socially relevant* by attempting to help the children of this high-risk community overcome their symptoms of anxiety.

1.3 Aims of the study

The primary aim of this study was to explore whether the FRIENDS programme is effective in reducing anxiety symptoms in a sample of South African children. Thus the study determined whether, after the implementation of the programme, the post-intervention ratings on two standard anxiety scales were significantly *lower* than the pre-intervention ratings. Based on the measuring instruments used by Barrett and Turner (2001), the Spence Children's Anxiety Scale (SCAS) (Spence, 1997) and the Revised Children's Manifest Anxiety Scale (RCMAS) (Reynolds & Richmond, 1978) were used to assess anxiety symptoms for the present study.

As a sub-aim, the study explored the effect of the FRIENDS programme on children's self-reported self-efficacy. To do so, the study compared the post-intervention ratings on a self-efficacy scale – the Self-Efficacy Questionnaire for Children (SEQ-C) (Muris, 2002) – with the pre-intervention ratings on the self-efficacy scale to determine whether the post-intervention ratings were significantly *higher* than the pre-intervention ratings on the SEQ-C.

1.4 Defining key constructs

1.4.1 Middle childhood children in the South African context

The developmental stage, as well as the physical surroundings and social context of the participants, (*M* age = 12,6 years) needs some brief consideration.

From the developmental perspective in psychology, children of the ages 6 through 12 are regarded to be in middle childhood (Louw, Van Ede, Ferns, Schoeman, & Wait, 1998), which typically spans the primary school years (Turner & Helms, 1995). Therefore, concerning the present study, all participants were regarded as still in the phase of middle childhood.

The participants were selected from a school in the Stellenbosch area. Stellenbosch is a peri-urban town, with a population density of 120 persons per square kilometre. In the greater Stellenbosch area, the most prominent languages are (in order of significance) Afrikaans, Xhosa, and English

(Statistics South Africa, 2001). Economically diverse neighbourhoods of Stellenbosch may be divided into different categories of income (Raubenheimer, Vorster, Rossouw, Muller, & Lotz, 1995). The community, from which the participants were selected, was predominantly a lower-income, coloured[*], Afrikaans-speaking community.

With regard to the social context, South African children are exposed to various environmental factors that many potentially affect their mental health. According to the National programme of action for children in South Africa (2001) there are a diversity of possible economic contexts where children grow up in. Some grow up in economic affluent households, yet some children live in poverty. It is estimated that about 60% of children grow up in poverty. Poverty has a detrimental effect on the functioning of a household and significantly impacts child development. The impact of HIV/AIDS is a reality for many children, either themselves born with the disease or who have lost their caregivers to the struggle against the disease. This has also led to the phenomenon of child-led households. Also, children are commonly exposed to and traumatised by violence, whether it is domestic, political, or criminal violence. In this matter, a recent official report of the South African Police Service (2005) indicates a high prevalence of violent crimes in the Stellenbosch area. For example in the 12-month period from April 2004 to March 2005 a total of 27 cases of murder, 15 cases of attempted murder, and 1028 cases of assault were reported for the Stellenbosch area.

1.4.2   Anxiety

As stated previously, anxiety refers to an indistinct and unpleasant feeling of uneasiness that is often accompanied by bodily symptoms, such as nausea or palpitations. Once again, it is important to keep in mind that, in the case of anxiety disorders, anxiety symptoms impair the person's normal functioning (Sadock & Sadock, 2003).

For the purpose of the present study, *anxiety symptoms,* as measured on both the Spence Children's Anxiety Scale (SCAS) (Spence, 1997) and the Revised Children's Manifest Anxiety Scale (RCMAS) (Reynolds & Richmond, 1978) will refer to the physiological, psychological and cognitive manifestations of anxiety.

1.4.3   Self-efficacy

According to Bandura (1986) self-efficacy refers to a person's evaluations of his/her competency at using certain skills or behaving such to reach environmental expectations. Relatedly, self-efficacy

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[*] Reference to race is controversial. However, in the current study it is not meant discriminatory in any way, but should be understood as referring to certain cultural groups existing in South Africa.

has also been defined as a person's perception of his/her ability to effectively deal with challenges and competently perform certain behaviours (Nevid et al., 2000), and to reach certain objectives (Baron & Byrne, 2000).

For the purpose of the present study, self-efficacy will refer to each child's self-evaluation of his/her ability to perform certain behaviour, to cope with challenges and to reach certain goals – as will be measured on the Self-Efficacy Questionnaire for Children (SEQ-C) (Muris, 2002).

1.4.4 Prevention

According to Cowen (1994), the primary focus in mental health has been on psychopathology and the treatment thereof, which could be costly in monetary and human capital. The World Health Organization (WHO) (2004) regards evidence-based prevention as one of the most important ways to reduce the incidence and personal impact of psychiatric disorders. In the same WHO report the FRIENDS programme was endorsed as an effective evidence-based prevention programme. In addition, the South African government regards prevention as an important strategy in mental and physical health care provision (Department of Health, 1997).

Primary prevention refers to interventions aiming to avert the onset of a given disorder *before* any symptoms arise, whilst secondary prevention is aimed at the early detection of persons manifesting symptoms and the swift treatment thereof, with tertiary prevention involving rehabilitation following the onset of a disease/disorder (Sadock & Sadock, 2003). Thus the present study falls into the first category of primary prevention by averting the onset of a full-blown anxiety disorder as non-referred children participated in the study.

Each level of prevention may further be divided into three sub-levels, namely: universal-, selective-, and indicated prevention. With universal prevention, all persons in a given population are targeted with a prevention programme, regardless of each individual's disorder status to prevent the onset of a given disorder (Mrazek & Haggerty quoted in Craske & Zucker, 2002). Thus universal prevention reaches at-risk and not-at-risk populations, as well as persons with sub-clinical or full-blown symptoms of a given disorder within the targeted population. According to Barrett and Turner (2004), used as a universal prevention, the FRIENDS programme has vast potential to reduce the incidence of childhood anxiety; with the additional benefit of reaching children with otherwise unidentified anxiety problems.

Considering the previous definitions, the FRIENDS programme, as used in this study, could be categorised as a primary intervention programme used universally, as all 12-year-olds, independent of their anxiety status, were enrolled in the programme.

For the present study, prevention will refer to actions aimed at averting the onset of a full-blown anxiety disorder.

1.4.5   FRIENDS[*] prevention programme

According to Babbie and Mouton (2001) a programme can be defined as "a series of actions designed with the purpose of addressing a given problem (p.355)". Therefore, the FRIENDS prevention programme could be considered as a series of actions with the purpose of preventing the onset of anxiety disorders in children.

According to the author, the "FRIENDS" programme consists of 10 weekly sessions with child-friendly activities designed to teach children coping skills and problem-solving techniques that would assist them in dealing more effectively with anxiety, thereby preventing the onset of a given anxiety disorder (Barrett, 2004).

The "FRIENDS" programme was chosen as an appropriate intervention for the present study on the grounds that it is a well-researched, evidence-based programme (Barrett, 2004).
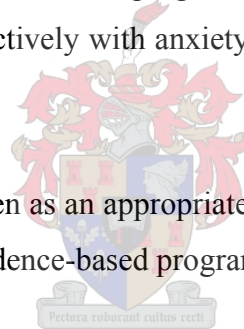
1.4.6   Programme evaluation

One of the many goals of programme evaluation is determining whether the intended outcomes of a given programme have been reached (Babbie & Mouton, 2001). Thus, programme evaluation determines if the programme attained what it set out to do (Graziano & Raulin, 2004). The FRIENDS programme sets out to prevent the onset of anxiety disorders and/or to lower anxiety levels by enhancing children's coping skills. Thus for the present study, it will be determined whether the FRIENDS programme does indeed prevent anxiety disorders in South African children.

A related concept is that of *effectiveness*. The evaluation of effectiveness is directed at determining whether a given programme still reaches its goals in the setting in which it is intended to be implemented. The setting, therefore, does not correspond to the rigidity of a randomised laboratory

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[*] In this text, where reference is made to the "FRIENDS programme" it should be understood as referring to the following programme, as compiled by Dr. Paula Barrett in the following manual: Barrett, P.M. (2004). *FRIENDS for life: Group leaders' manual.* Bowen Hills, Australia: Australian Academic Press.

setting, but rather corresponds to the real world setting (Singh & Oswald, 2004). Since, for the present study, the programme is implemented in a school setting that is a real world setting, the present study will be concerned with determining the *effectiveness* of the given programme.

To operationalise programme evaluation: for the present study, programme evaluation will refer to determining the effectiveness of the FRIENDS programme in preventing the onset of anxiety disorders in a sample of South African children by lowering the given children's anxiety scores on two standard measures of anxiety, namely the SCAS (Spence, 1997) and the RCMAS (Reynolds & Richmond, 1978).

1.5   Chapter summary

In this chapter, the research question, motivation for the study and the aims of the study were addressed. In addition, operational definitions for the key concepts of middle childhood children, anxiety, prevention, self-efficacy, the FRIENDS intervention programme, and programme intervention, were provided.

The subsequent chapter addresses theories relating to anxiety.

CHAPTER 2

THEORETICAL PERSPECTIVES ON CHILDHOOD ANXIETY AND SELF-EFFICACY

2.1   Introduction

In this chapter theories relevant to childhood anxiety and self-efficacy will be discussed. This thesis is grounded in the cognitive behavioural perspective, equally as the FRIENDS programme is based mainly on the principles of cognitive behavioural therapy (CBT). The first theory to be addressed in this chapter is the cognitive behavioural perspective's view on anxiety. Secondly, the contribution of behavioural principles in anxiety will be discussed at the hand of learning theory, and thereafter the psychosocial perspective. As a meta-theory, the ecological systems theory will serve as a broad framework to account for systems that impact on the developing person and that may contribute to childhood anxiety and self-efficacy.

2.2   Cognitive behavioural perspective on childhood anxiety and self-efficacy

Since the FRIENDS programme is based on cognitive behavioural theory (Barrett, 2004), so too is the current thesis grounded in the cognitive behavioural theory. This section will consider cognitive processes that are thought to be involved in anxiety disorder symptoms. Yet, to contextualizse, this section commences with a broad overview of children, developmentally, in middle childhood.

Regarding the present study, a total of 46 12-year-old (M =12,6) children participated in the study. Developmentally, children of the ages 6 through 12 are regarded to be in middle childhood (Louw, Van Ede et al., 1998), which typically spans the primary school years (Turner & Helms, 1995). Therefore, concerning the present study, participants were all in middle childhood. During middle childhood, physical growth is slower than in early childhood, yet fine- and gross motor skills improve. The child's self-concept can be influenced by the degree to which these skills are mastered (Turner & Helms). Consequently participants should have mastered basic fine- and gross motor skills. However, two recent studies, with children from the same area as participants in the present study, found that the visual-motor integration of children from this area lags behind (Lotz, Loxton, & Naidoo, 2005; Loxton, Mostert, Moffatt, in press). For the present study it was thus decided to implement the programme with an older age group as their fine motor skills should, theoretically, be better developed than those of a younger age group. Furthermore, linguistically, children in middle childhood expand their vocabulary and learn to master syntax. With increasing social interaction, children also learn the pragmatics of language (Turner & Helms, 1995). Thus theoretically participants should have mastered, at least, the basic reading and writing skills of

language. However, recently it was demonstrated that the reading and writing ability of South African children are seriously behind what should be expected at this stage of their development (Western Cape Education Department, 2003). In addition to the abovementioned problems with visual-motor integration, this served as another reason for targeting an older age group in the present study. For the present study, the effect of literacy on anxiety scores was not explored as it is beyond the scope of the present investigation.

Considering anxiety from the cognitive behavioural theory, Beck and Emery (1985) emphasised that there is more to anxiety than the mere behavioural manifestation or physical signs of the anxiety state. They focused on the less prominent feature, a person's cognitions, and the important role cognition plays in the generation of anxiety. Cognition refers to "the processes of receiving information, interpreting and storing it, and later retrieval and use of that information (p.10)" (Meyer & Van Ede, 1998a); basically cognition is the process of making sense of incoming information.

The cognitive behavioural perspective considers cognitions to have an important contribution in determining behaviour, emotions, and also psychopathology (Beidel & Turner, 1986; Kendall, 1985; Nevid et al., 2000; Reed, Carter, & Miller, 1992; Sadock & Sadock, 2003). In this regard, the following factors of cognition are considered etiological to psychopathology, namely: maladaptive automatic thoughts, maladaptive schemas, and cognitive distortions (Freeman, Pretzer, Flemming, & Simon, 1990). Furthermore, errors in the information processing sequence are implicated in the development of deviant cognitions (Beidel & Turner). These deviant cognitions are thought to develop early in childhood (Prins, 2001). Consequently, interventions should also address aberrant cognitions in the amelioration of anxiety. Since deviant cognitions are thought to be formed in childhood, it is important to include cognitive restructuring in childhood interventions for anxiety.

Automatic thoughts may be defined as instant, spontaneous and telegraphic interpretations of situations. Importantly they occur automatically - with no conscious effort to formulate them. With psychopathology, automatic thoughts become maladaptive and have certain characteristics. Firstly, automatic thoughts are both overt and distinct to a person or particular disorder. Furthermore, the person believes these thoughts to be true and realistic even when they are objectively not. The second characteristic of maladaptive thoughts is that they distort reality (Beck, 1976).

Schemas may be regarded as a cognitive frame of reference. Information acquired through personal experience in the social world is represented within schemas for later use. The role of schemas is to

arrange new information and to assist in the interpretation thereof. Schemas function such that they give precedence to the processing and retrieval of information that is congruent with the schemas. Therefore, schemas influence cognition and have the potential to distort reality (Baron & Byrne, 2000). When taking into account that the cognitive content of the schemas of persons with anxiety disorders revolves around themes of danger (Beck, 1976) then it becomes clear that information congruent to themes of danger will receive precedence during processing. According to Kendall (1985) this is exactly the case. The cognitive processing of children with anxiety disorders is focused on danger-related information. From this it can be taken that a person's interpretation of a given situation is influenced by his/her underlying assumptions within his/her schemas, which in turn, may predispose him/her to psychopathology.

Cognitive distortions are faulty conclusions that result from faulty cognitive processing (Kendall, 1985), and is another factor implicated in psychopathology. Some of the cognitive distortions seen in anxiety are selective abstraction, dichotomous thinking and catastrophising. In selective abstraction, the person focuses on the negative aspects of a given situation, ignoring the positive aspects of the situation. Dichotomous thinking occurs when the person thinks of a situation in the absolutes of two extremes. In catastrophising the person blows the negative aspects of a situation out of proportion (Beck & Emery, 1985). By distorting reality, cognitive distortions influence the interpretation of a given situation. For example, catastrophising may cause a test anxious child to perceive an examination as an insurmountable obstacle.

According to the cognitive behavioural perspective, there is an inter-relationship between cognitions, behaviour and affect (Baron & Byrne, 2000; Freeman et al., 1990). Therefore, maladaptive cognitions can give rise to both maladaptive behaviour and affect.

To summarise, the cognitive behavioural perspective considers the influence of the interaction between cognition, behaviour and affect when conceptualising anxiety. More specifically, this perspective regards maladaptive automatic thoughts, maladaptive schemas and cognitive distortions as etiological to anxiety.

2.3 Learning theory perspective on childhood anxiety and self-efficacy

Two theories of learning, namely classical conditioning, and observational learning, can be used to explain the etiology and/or maintenance of anxiety, as the learning theory perspective emphasises the association between behaviour and the environment.

Classical conditioning can be described as follows. When a neutral stimulus (NS) is consistently presented in the presence of an unconditioned stimulus (UCS) – the stimulus that leads to the natural response, called the unconditioned response (UCR) – an association will form between the NS and the UCS. Subsequently, when the NS – now called the conditioned stimulus (CS) – is presented in the absence of the UCS, the CS will produce the response, which is now called the conditioned response (CR) (Watson quoted in Spangenberg, 1998). Applied to anxiety disorders, a person could learn to produce a certain CR (fear or anxiety) on presentation of the CS (the fear- or anxiety provoking situation or object) via the formation of an association between a NS and the UCS that originally produced an unconditioned fear or anxiety response. Apart from the role that the principles of classical conditioning play in fear acquisition, Loxton (2005) classical conditioning can also explain avoidance behaviour: associating a given stimulus with a fear reaction can lead to the avoidance of that stimulus. Classical conditioning theory was revised by Rachman (1977) in order to apply the theory to human behaviour, hence a model was proposed consisting of three ways people could acquire fears. In the first instance people can *directly* develop fears via classical conditioning. In contrast with the first way, people can also develop fears *indirectly* via vicarious learning (observational learning) and the acquisition of information. Rachman (1977) proposed that fears could be acquired vicariously if a stimulus is vicariously associated with hurtful or anxious outcomes. He also regarded the received information as an important way in which fears could be transmitted. Hence it seems fears can be acquired, not only through the forming of associations of conditioning, but also through observing others' behaviour. Various studies have been conducted on the third pathway of fear acquisition proposed by Rachman, namely information. Field, Argyris and Knowles (2001) explored whether the receiving of information is related to fears in children. They exposed children either directly (a story) or indirectly (a video) to either positive or negative information about a novel stimulus (a monster). Results indicated that information indeed had a significant effect on children's fears; that is children who received positive information about the monster had lower fear scores after receiving the information compared to before receiving the information. In conjunction, children who received negative information about the monster had higher fear scores after receiving the information compared to before receiving the information. The type of information – either direct (story) or indirect (video) – had no effect on the children's fears. Two recent reviews also found support for Rachman's (1977) proposed three pathways of fear acquisition in the onset of most common childhood fears as well as phobias in children (King, Gullone, & Ollendick, 1998; Merckelbach, De Jong, Muris, & Van den Hout, 1996).

According to the principles of observational learning, a person can learn to produce a certain response by observing the response being performed by someone else. Once the behaviour has been

observed, a process that requires attention, the behaviour is represented symbolically (either verbally or visually) and retained for later performance of the given behaviour. The consequences of the model's behaviour can influence whether what was observed would be translated into action. Performance of the behaviour is subject to motivation, and thus not all behaviours that are observed and learned are translated into performance (Bandura, 1977). Applying this theory to anxiety, a child can learn to react with anxiety or fear to a stimulus by observing another person react with fear or anxiety to the given stimulus. Muris, Steerneman, Merckelbach, and Meesters (1996) further investigated the role that modelling (observational learning) play in childhood fears and anxiety. They found that the amount of times a mother modelled her fears to her child was related to the child's level of fear. In another study exploring the effect of parental modelling on the acquisititon of fears in children, they were exposed to two rubber toys. Mothers were asked to react with either positive or negative facial expressions to either toy. Results revealed that children reacted with greater avoidance and fearful facial expressions to the toy following negative facial expressions from the mother, indicating the potential role of modelling in the acquisition of children's fears (Gerull & Rapee, 2002). This suggests that if anxious parents model their fearful behaviour to their children, children may learn these anxious behavioural patterns. On the other side of the same coin, concepts of observational learning can also be applied to fear reduction. By using strategies of disinhibitory modelling, phobias, achievement anxiety, and interpersonal anxiety have been reduced successfully (Bandura, 1986). Therefore, observational learning can also be applied to the FRIENDS programme. The FRIENDS programme contains activities that utilise many of the principles of observational learning, such as participants observing adaptive behaviour being modelled by the group leader; role-play where children enact the adaptive behaviour that was modelled; as well as verbal reinforcement from the group leader and peers.

In sum, classical conditioning theorises that anxiety is a learned response to a conditioned stimulus. According to observational learning and Rachman's (1977) three pathways of fear acquisition, fears can also be learned indirectly. In other words, by watching a model react with fear to a stimulus an observer may learn to respond in a similar way. Rachman also adds the transmission of fear related information as a means by which fear can be learned. Although the principles of learning contribute to the acquisition of fears, the same principles can be used in the treatment of anxiety.

2.4   Psychosocial developmental perspective on childhood anxiety and self-efficacy

Psychosocial theory posits that normal, predictable development throughout life can be divided into distinct developmental stages, each with its own developmental crisis and developmental tasks that results in the person acquiring new skills (Meyer &. Van Ede, 1998b). Therefore, for the present

study the psychosocial theory serves as a framework for the normal developmental pattern within various domains of functioning that can be expected during middle childhood.

According to the psychosocial perspective, the developmental pattern, from birth to old age, can be divided into distinct developmental stages. Erikson (1963) distinguished eight distinct developmental stages – each with its own developmental tasks and psychosocial crisis. Each psychosocial crisis, specific to a given developmental stage, is represented by two contrasting poles – one reflecting a positive resolution of the crisis and the other reflecting a negative resolution. The psychosocial crisis refers to the normative tension experienced during each stage, which originates from the demands placed on a person by the external social environment requiring an adaptive response (Newman & Newman, 2003). The psychosocial crisis of middle childhood is industry versus inferiority (Erikson, 1963). Against this background the school plays an important role since it is the setting where many skills are taught (Newman & Newman). Depending on either the child's mastery or failure to master certain skills, a child develops either a feeling of industry or inferiority (Erikson). Resolving the psychosocial crisis towards industry would create enthusiasm about learning new skills (Newman & Newman, 2003), and feelings of pride and satisfaction with each new achievement (Turner & Helms, 1995). Resolution towards inferiority would create feelings of insufficiency and may cause the child to withdraw from activities and people (Turner & Helms, 1995). It should be borne in mind that for the current psychosocial crisis the resolution of previous psychosocial crises plays a determining role (Erikson). Wait (2005) states that "this stage, with its increased demands socially and educationally, can create anxiety for children who cannot cope with these demands. Anxiety, in turn, can impact negatively children's personality development (p.129)". Furthermore, according to Bandura (1997), a person's sense of self-efficacy has a unique contribution to the etiology of anxiety. Therefore, it is possible that self-efficacy, which is being established during middle childhood, may either be a predisposing or protective factor against anxiety disorders. Also, considering the effect anxiety could have on children's psychological development it emphasises once more the need for prevention and early intervention of anxiety disorders in childhood.

Regarding emotional development, the psychosocial perspective acknowledges the notion of normative fears. In other words, certain distinctive fear content, anxieties, and worries are to be expected during certain ages. Yet with increasing age, these fears, anxieties, and worries should decline. If a given fear, anxiety, or worry should persist beyond what is to be expected of a given age, it may be indicative of an underlying anxiety disorder (Mash & Wolfe, 2002). The children in the present study are around the age of 12 years. According to Klein and Last (quoted in Mash and

Wolfe, 2002) typical fear content and anxieties of children between the ages of 9 through 12 surround themes of school performance, physical injury or death. Thus, should participants in the study express these fears and worries, it would be normative. Should these fears and worries be excessive (as would be evident from, for example, clinical assessment), or should fear content from a previous developmental stage persist, it could be indicative of an anxiety problem. Also, during middle childhood, children have a greater emotional awareness and understanding (Louw et al., 1998). Their emotions are marked by flexibility and greater differentiation. Typically children now are less afraid of objects threatening their physical safety; yet remain afraid of the super natural. New fears and anxieties regarding topics such as tests, being mocked by peers, and parental mortality also arise at this time (Turner & Helms, 1995). Thus it would seem that participants could be expected to exercise greater control over their emotions than in the previous stage.

Social development is marked by the preference of a close (or "best") friend, as well as activities and games that require group participation (Wait, 2005). Characteristically, children enter into friendships with children of the same sex. As children grow older, their friendships develop from being egocentric to being more mutual (Turner & Helms, 1995). The value of team play, one of the developmental tasks of this stage, is that it teaches members of a team to be interdependent (i.e. working together and relying on one another), and the advantages of division of labour (i.e. assigning specific roles to team members), as well as teaching children the concept of competition (Newman & Newman, 2003). Hence social interaction has an important role in teaching children certain skills.
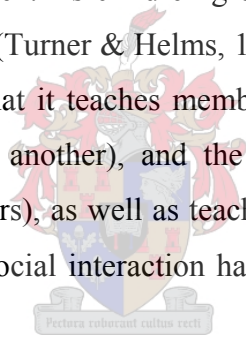
Self-evaluation – the process of evaluating achievement to internalised standards as well as expectancies from the environment – is also subject to messages from peers and adults (Newman & Newman, 2003). Louw et al. (1998) state that children are aware of their true self, yet aspire to their ideal self. According to Newman and Newman, the preceding psychosocial stage, with the crisis of initiative versus guilt, is determinant of whether a child would approach this developmental task with a sense of assurance or uncertainty. Self-efficacy, previously defined as a person's perception of whether his/her ability to deal with a challenge and perform certain behaviours (Nevid et al., 2000) and to reach certain objectives (Baron & Byrne, 2000), is related to the process of self-evaluation. Importantly, the level of a child's self-efficacy determines how the child will deal with a new challenges, or adversity (Newman & Newman). Having a high sense of self-efficacy will enable a child to persist, with intensified effort, when faced with adversity, whereas having low self-efficacy will cause a child to quit at the first signs of adversity (Bandura, 1986). Also, having a high sense of self-efficacy for dealing with a potentially harmful situation, aids coping behaviour

and lessens anxiety arousal (Bandura, 1997). Interaction with others, therefore, has an important impact on self-evaluation and self-efficacy.

With regard to cognitive development, schooling has a fundamental role. Children enter the stage of concrete operations whereby their reasoning abilities largely resemble that of adult reasoning abilities (Meyer & Van Ede, 1998a). They also gain an understanding of concepts such as space and time, and their problem-solving abilities expand (Turner & Helms, 1995). Children of this stage, however, have not mastered abstract thinking yet (Meyer & Van Ede). The FRIENDS programme is CBT based and, therefore, uses many cognitive techniques (Barrett, 2004). Given the cognitive development of children in middle childhood, participants in the present study should have been capable of comprehending the material in the programme. This was the main reason for selecting older (12-year-old) children to participate in the present study, although the programme has been developed to focus in the age range 7 to 11 years.

To summarise, from a psychosocial perspective, normative fears refer to those fears, according to number and content, that are to be expected during certain ages or developmental stages. When these fears persist beyond a given developmental stage or are excessive, it may be indicative of an underlying anxiety disorder. During middle childhood children develop a sense of either industry or of inferiority, which is related to the concept of self-efficacy. In turn, low self-efficacy is thought to contribute to the development of anxiety.
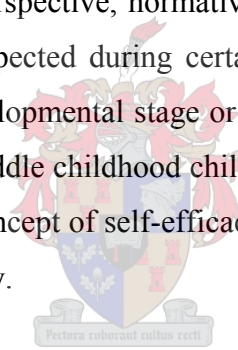
2.5 Ecological systems perspective on childhood anxiety and self-efficacy

Environmental influences are another important aspect to consider when describing human development, since a person does not function as a single entity, but interacts with, and is interacted upon by, the environment. The ecological systems perspective emphasises that interactions with different systems can influence a child's fears, coping mechanisms and perceived efficacy.

According to the ecological model, a person's environment, which has a profound influence on his/her development, is composed of four subsystems: the micro-, meso-, exo- and macrosystems (Bronfenbrenner, 1979) as well as the chronosystem (Bronfenbrenner, 2001). Central to this theory, is the concept that a person should not be viewed in isolation of the environmental influences that surround the person. Importantly, the nature of the interaction between the person and his/her environment is bi-directional. Also, the ecological model emphasises the importance of a person's *perception* of that ecological environment rather than the objective nature of the environment (Bronfenbrenner).

The microsystem refers to the smallest subsystem in a person's ecological environment: a person's immediate physical and social environment, which includes roles, activities, and interpersonal relationships (Bronfenbrenner, 1979). For children, examples of microsystems are the relationship between a child and his/her parent, or the relationship between a child and his/her friend. In this regard a recent study found a significant association between parental rearing styles and anxiety symptoms in a sample of South African children (Muris, et al., 2006).

On a broader level, the mesosystem refers to the interrelationships among microsystems in which a person is directly present (Bronfenbrenner, 1979). An example of such a mesosystem in a child's environment is the interrelationship between the child's school and his/her family.

The exosystem refers to events within settings which occur outside of the person's immediate environment. Yet these events exert an indirect influence on the person's development (Bronfenbrenner, 1979). For children, two examples of exosystems are their parents' work, or the media. In the present study, parents were unable to participate in parental sessions mainly because of socio-economic factors and long working hours.

The broadest level of the ecological environment is the macrosystem and it refers to beliefs or ideologies that govern a given society or culture (Bronfenbrenner, 1979). To name a few, the belief systems, customs, opportunities, and obstacles of a given culture or subculture form part of the macrosystem, which influences child development. Lately the emphasis has fallen on the important role the cultural context plays in shaping child development and behaviour (Rogoff & Morelli, 1989). In this regard, literature indicates that black and coloured communities still live in conditions characterised by poverty and violence (Biersteker & Robinson, 2000).

As the phrase would suggest, the chronosystem refers to the historical time in which the other four systems are imbedded (Bronfenbrenner, 2001). For the children in the present study, post-apartheid South Africa forms an important aspect of their chronosystem.

In summary, the ecological model of development takes into account the interrelationship between the person and the environment that is thought to consist of four subsystems, namely the micro, meso, exo and macrosystems. This emphasises that when addressing childhood anxiety, attention should also be given to *interpsychic* environmental influences on the child's behaviour, such as the parent-child relationship, exposure to community violence, and poverty, in addition to considering *intrapsychic* aspects, such as cognitive schemas that might influence the child's behaviour. For the

present study, however, it is beyond the scope of the present investigation to explore the effects of environmental influences on participants' anxiety scores.

2.6　　　　**Chapter summary**

In this chapter three theories relevant to the etiology of anxiety, the cognitive-behavioural perspective, learning theory, and psychosocial perspective, were discussed.

According to the cognitive behavioural perspective, aberrant cognitions; namely maladaptive automatic thoughts, maladaptive schemas, and cognitive distortions are at the root of anxiety. Since cognitions are thought to have an interrelationship with both behaviour and affect, these maladaptive cognitions contribute to the behavioural and affective manifestation of anxiety.

The learning theory focuses on the acquisition of anxiety via the principles of classical conditioning whereby anxiety is thought to be a learned response to a conditioned stimulus. Rachman's (1977) theory on the origin of fears postulates two alternate ways fear can be acquired: through modelling, and the transmission of fear-related information.

Normative fears were discussed on the basis of the psychosocial perspective. According to this perspective, children experience certain fears during certain ages or developmental stages. Should these fears be in excess or persist beyond a given developmental stage, they may be indicative of an anxiety disorder. Also, it was stated that children in middle childhood develop a sense of self-efficacy. Self-efficacy is also thought to contribute to the development of anxiety.

The ecological system theory emphasises that a child does not function independent of his/her ecological environment. Thus when addressing childhood anxiety and self-efficacy, attention should also be devoted to environmental influences that may impact on the child's behaviour.

The subsequent chapter will address relevant literature on amongst other things the prevalence, cognitive processes, behavioural aspects, amelioration, and prevention of childhood anxiety.

CHAPTER 3

LITERATURE REVIEW

3.1   Introduction

This chapter that relates to the review of relevant literature on childhood, starts by contextualising the problem of childhood anxiety by addressing issues such as the prevalence and sequelae of childhood anxiety. Following, the cognitive and behavioural manifestations of childhood anxiety are discussed. Also, interventions for childhood anxiety are discussed in terms of cognitive behavioural *treatment*, and *preventative* interventions. Lastly, literature on self-efficacy, and its relation to anxiety, is considered.

3.2   Prevalence and sequelae of childhood anxiety

Firstly, an important distinction should be made between the concepts "fear" and "anxiety". Fear is a response to a real, objective threat or potentially dangerous situation, whereas anxiety is experienced without an objective threat or potentially dangerous situation being present (Mash & Wolfe, 2002). As mentioned before, anxiety – which is common to all anxiety disorders – is usually referred to in literature as a vague feeling of uneasiness accompanied by physical symptoms such as dizziness, sweating, palpitations and tremors (Sadock & Sadock, 2003) in the absence of objective danger.
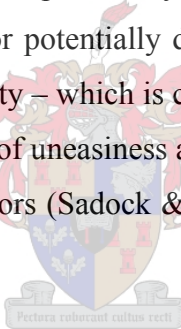
Currently, the DSM-IV-TR acknowledges the following childhood anxiety disorders: Separation anxiety disorder, generalised anxiety disorder, specific phobia, social phobia, obsessive-compulsive disorder, panic disorder, panic disorder with agoraphobia, post-traumatic stress disorder and acute stress disorder (Mash & Wolfe, 2002). Recently it has been found that children's anxiety symptoms indeed tend to cluster into 6 distinct, yet correlated first-order factors, all of which correspond to the same second order factor, namely that of anxiety. Furthermore, these 6 categories correspond largely to the categories used by the DSM-IV, lending support to the anxiety disorder categories of the DSM-IV (Spence, 1997).

With regard to the prevalence of anxiety among children, Perold (2001) and Muris, Schmidt, et al. (2002) examined childhood anxiety symptoms according to DSM-IV criteria in school children from the Western Cape. The study by Perold (2001) reported a prevalence of childhood anxiety symptoms of between 22% and 25,6% for the Western Cape – a rate much higher then what is reported for certain other countries. For example, studies with American children reported much

lower rates of anxiety disorders; one study reported a prevalence rate of about 10% (Bell-Dolan, Last & Strauss, 1990) while another study report a rate ranging between 13.8% (according to parent report) and 21% (according to child report) (Kashani & Orvaschel, 1990). Muris, Schmidt, et al. (2002) compared the South African sample to comparison subjects from a Dutch sample, where results revealed that South African children reported significantly more anxiety symptoms than the Dutch children. Taken together, literature suggests that the prevalence of childhood anxiety among children living in South Africa, or at least insofar the Western Cape is concerned, is much higher than in other countries.

Certain results, amongst others, from the study by Perold (2001) and Muris, Schmidt et al. (2002), indicated that girls reported more anxiety symptoms than boys. This tendency is consistent with what other researchers have found (Bell-Dolan, et al., 1990; Essau, Sakano, Ishikawa, & Sasagawa, 2004; Kashani & Orvaschel, 1990; Muris et al., 1998). Various studies report that younger children experience more anxiety symptoms than older children (Bell-Dolan et al.; Essau et al.; Muris, Schmidt, et al., 2002) while age groups differ on the type of anxiety symptoms (Kashani & Orvaschel, 1990) and fears (Ingman, Ollendick, & Akande, 1999) experienced. This indicates that anxiety symptoms, as reported by children, are variable between sex and among age.

In terms of the content of children's anxiety symptoms in the Western Cape, the most prevalent anxiety disorder symptoms were, in order of significance, that of obsessive-compulsive disorder, generalised anxiety disorder, social phobia and separation anxiety disorder (Perold, 2001). In contrast, the most common anxiety symptoms reported by German children seems to be, in order of significance, social anxiety, obsessive-compulsive disorder, generalised anxiety and separation anxiety; compared to Japanese children who report significantly more symptoms of fears of physical injury (Essau et al., 2004). Taken together, this might suggest that the content of children's anxiety might be influenced by culture as is demonstrated by certain studies (Ingman et al., 1999).

It seems that socio-economic status is an important factor in childhood anxiety. Children from a higher socio-economic-status have significantly lower anxiety symptoms compared to children from a lower socio-economic-status (Muris, Schmidt, et al., 2002; Perold, 2001). Recent studies report that childhood anxiety disorder symptoms in South-African children are more prevalent in coloured and black children than in white children (Muris, Schmidt, et al., 2002; Muris, et al., 2006). In accordance with this, Burkhardt et al. (2003) have found that black and coloured children report more childhood fears than white children, with girls reporting more fears than boys. Taken together

this suggests that anxiety varies with socio-economic status, as may well be reflected in the difference in the prevalence of anxiety symptoms among racial groups.

A great deal can be said about the sequelae of childhood anxiety. Apart from comorbid disorders and psychosocial problems, childhood anxiety tends to persist beyond childhood into adulthood (Mash & Wolfe, 2002). This is illustrated by several retrospective studies where adults report having had anxiety disorder symptoms during childhood. For example, in one study more than half of adult participants report having had one or other childhood anxiety disorder (Otto et al., 2001). Certain prospective studies point to the long-term effects and problems that adults who had a childhood onset of an anxiety disorder, still have in adulthood (Flament et al., 1990; Last, Hansen, & Franco, 1997). For example, in a follow-up study of adults with childhood onset obsessive compulsive disorder, it was found that 68% of the participants still met the diagnosis for OCD at follow-up (Flament et al.). In addition adults with childhood onset anxiety and comorbid depression were found to be more inclined to use psychological services, and report having more psychosocial problems than adults without childhood onset anxiety (Last et al.). Also, an earlier age of onset for anxiety disorders is associated with a less favourable outcome. Otto et al. (2001) found that for adults with social phobia who had had an earlier age of onset, evidenced more fear and avoidance of social situations compared to adults who had had a later age of onset.

Additionally several disorders are comorbid to anxiety. Verduin and Kendall (2003) found that children, who suffer from separation anxiety disorder, have the highest rates of comorbid diagnoses, with the most likely diagnosis being specific phobia. The most likely comorbid diagnosis for children with generalised anxiety disorder or social phobia is that of comorbid mood disorders. Also, children with anxiety experience significantly more depressive symptoms than non-anxious children (Kashani & Orvaschel, 1990). Children with post-traumatic stress disorder commonly experience comorbid anxiety disorders and suicidal ideation (Famularo, Fenton, Kinscherff, & Augustyn, 1996). Externalising disorders, such as attention deficit and hyperactivity disorder, conduct disorder and oppositional defiant disorder are common comorbid diagnoses among children with anxiety disorders (Russo & Beidel, 1994). Moreover, children with anxiety disorders are at increased risk for substance-use (Mash & Wolfe, 2002) and substance dependence disorders (Goodwin, Fergusson, & Horwood, 2004). Depression is a common comorbid diagnosis in anxiety disorders (Mash & Wolfe). In their review of several epidemiological studies on anxiety and depression, Axelson and Birmaher (2001) found that between 25-50% of children diagnosed with depression also have a comorbid anxiety disorder, and between 10-15% of children diagnosed with an anxiety disorder are also diagnosed with comorbid depression.

Psychosocially, anxiety disorders create profound problems for children. During social interactions, anxious children have more fear of negative evaluation (Chansky & Kendall, 1997) and are less likely to receive positive responses from their peers (Spence, Donovan, & Brechman-Toussiant, 1999) compared to non-anxious children. Anxious children are liked less by their peers and less likely preferred as playmates (Strauss, Frame, & Forehand, 1987; Strauss, Lahey, Frick, Frame, & Hynd, 1988), since their peers perceive them as shy and socially reserved (Strauss et al.). According to parent report, anxious children have fewer friends than non-anxious children (Chansky & Kendall).

Furthermore, anxious children are also more likely to be regarded by their peers as being neglected (Strauss, et al., 1988). They are also more likely to report loneliness than normal control children (Strauss, Lease, Kazdin, Dulcan, & Last, 1989). Clinically anxious children are rated by parents and teachers as being less socially competent (Chansky & Kendall, 1997; Strauss et al., 1989) and as being more reserved and nervous (Strauss et al., 1989). In comparison clinically anxious children perceive *themselves* as being more socially impaired and having little social competence (Chansky & Kendall).

Also, children with social phobia have been demonstrated to have poorer social skills than control children, since they have less interaction with their peers and are less likely to initiate interactions. Furthermore, children with social phobia rate themselves as having poorer social skills, being less proficient with interactions with peers, and being less assertive compared to their peers (Spence et al., 1999). Compared to normal control children, clinically anxious children have significantly more negative expectancies of social situations; with social anxiety being the best predictor of negative social expectations. In addition, clinically anxious children report significantly more avoidance of new situations and social situations (Chansky & Kendall, 1997). It has also been demonstrated that anxious children are less proficient at understanding emotional regulation than non-anxious children (Southam-Gerow & Kendall, 2000). Taken together, childhood anxiety could well negatively affect various aspects of children's psychosocial functioning.

Often anxiety seems to impact negatively on children's academic performance. Children with anxiety disorders tend to have problems with their school performance, and frequently display concentration problems (Strauss et al., 1987). Anxious adolescents are more likely to drop out of school before attaining the desired level of education than non-anxious adolescents (Van Ameringen, Mancini, Farvolden, 2003).

To summarise the discussion so far, the prevalence of childhood anxiety is much higher in samples of South African children, compared to children from other parts of the world. Therefore, it seems that childhood anxiety is a common problem among children from South Africa, thus emphasising the need to address the problem. Also, the prevalence of anxiety disorder symptoms is higher among some subgroups than others: The prevalence of childhood anxiety is reported to be higher among children from lower socio-economic backgrounds than children from a higher socio-economic backgrounds, also among black and coloured children than white children. Thus would suggest that the risk of childhood anxiety is greater among certain subgroups of children than among others.

Regarding the sequelae of anxiety, literature points to the persisting nature of anxiety symptoms. Also, various disorders occur commonly comorbid to anxiety, such as depression or other anxiety disorders. Anxiety symptoms are reported to create various psychosocial problems for children, and have a negative impact on children's academic performance. Hence the problem of childhood anxiety reaches further than the mere anxiety symptoms or distress which that creates, but rather it can give rise to a host of other problems. This confirms the importance for preventative measures and early intervention.

3.3 Cognition and behaviour in childhood anxiety

As mentioned previously, cognition is thought to play an important role in determining behaviour and emotions (Beidel & Turner, 1986; Kendall, 1985; Nevid et al., 2000; Reed et al., 1992; Sadock & Sadock, 2003). It is generally thought that maladaptive cognitions are interrelated with maladaptive behaviour and affect (Sadock & Sadock). Compared to the above, Beck (1991) argued that the maladaptive cognitions are a *process* whereby a said disorder develops rather than being the *cause* of a certain disorder.

In this regard literature on cognition in childhood anxiety point to distinctive characteristics of children's thought, such as attention bias, cognitive distortions, interpretation bias, negative self-statements, and maladaptive schemas.

Some evidence suggests that children with anxiety disorders display the same attention bias that have been documented in adults with anxiety disorders (Ehrenreich & Gross, 2002). Various studies report that anxious children demonstrate attention bias – that is, their attention is directed towards threatening stimuli, whereas non-anxious children attend equally to both threatening and neutral stimuli (Vasey, Daleiden, Williams, & Brown, 1995; Waters, Lipp, & Spence, 2004). In contrast

with this a related study found anxious children to demonstrate attention bias, but the boys in their study directed their attention *away* from the threatening stimuli (Vasey, El-Hag, & Daleiden, 1996). Nonetheless, Vasey et al. (1995) argues that attention bias plays an important role in the maintenance and intensification of anxiety.

Distinctive cognitive distortions, present in anxiety disorders, are another cognitive factor that has been investigated in childhood anxiety. Studies have shown that anxious children are significantly more prone to cognitive distortions, such as overgeneralisation, catastrophising, personalising, and selective abstraction, than non-anxious children (Leitenberg, Yost, & Carroll-Wilson, 1986). For example, in social-evaluative situations, children with social anxiety expect to have negative outcomes and rate their performance as being poorer (Spence et al., 1999). Even when controlling for the effect that depression may have on cognitive distortion, overgeneralisation, catastrophising and personalising are still significantly related to anxiety. Furthermore, overgeneralisation is the best predictor of trait anxiety whereas catastrophising and personalising are the best predictors of both anxiety sensitivity and manifest anxiety (Weems, Berman, Silverman, & Saavedra, 2001).

It seems that anxiety also influence children's interpretations of stimuli. For example, when anxious children are presented with ambiguous situations and asked how they think *someone else* would interpret the situations as opposed to how *they* would interpret the situations, anxious children are inclined to report negative interpretations for how they think others would interpret the situations as compared to how they would themselves interpret the situations (Dineen & Hadwin, 2004). Anxious children are also more inclined to interpret ambiguous stimuli as being threatening, compared to non-anxious children, upon which anxious children choose avoidant solutions for the ambiguous situation (Barrett, Rapee, Dadds, & Ryan, 1996; Chorpita, Albano, & Barlow, 1996; Shortt, Barrett, Dadds, & Fox, 2001). In an interesting study, children were asked to interpret a series of homophones that was presented to them orally. The homophones could either be interpreted as being threatening or neutral. Results indicated that anxious children were more inclined to a threatening interpretation of the homophones compared to non-anxious children (Hadwin, Frost, French, & Richards, 1997). More specifically, some evidence indicates that children with specific phobia are more inclined towards threatening interpretations and avoidant behaviour in *physically* ambiguous situations where children with separation anxiety disorder or social phobia are more inclined to threatening interpretations and avoidant behaviour in *socially* ambiguous situations (Barrett, Dadds, & Rapee, 1996).

Furthermore, Muris, Merckelbach and Damsma (2000) explored threat perception in children who are socially anxious. The children were told socially ambiguous stories and asked to interpret it. Results indicated that socially anxious children had lower thresholds for threat, interpreted the stories as threatening more frequently and reported more negative feelings and cognitions compared to the control group.

In addition, the question was addressed whether threat perception, like interpretation bias and low thresholds for threat, is related to state or trait anxiety. Researchers found that state and trait anxiety each explained a unique and significant proportion of the variance in threat perception; however state and trait anxiety together did not explain any variance in threat perception. Also, anxiety symptoms explained a significant proportion of the variance in threat perception. Furthermore, higher levels of state or trait anxiety were each related to a lower threshold for threat and more threat perception (Muris, Rapee, Meesters, Schouten, & Geers, 2003).

Another cognitive factor that has been investigated in childhood anxiety is that of self-statements. The states of mind model (SOM) describes the balance of positive to negative self-statements. The SOM ratio is calculated by dividing the amount of positive statements by the sum of the amount of positive plus negative self-statements. According to the SOM model, a ratio of less than .55 is associated with psychopathology and amongst others, anxiety. In contrast, a ratio of between .56 and .68 is considered optimum (Prins, 2001). In addition, it has been demonstrated that the SOM model and its set points are applicable to children (Daleiden, Vasey, & Williams, 1996; Ronan & Kendall, 1997). Exploring the factor structure of children's negative self-statements, it was found that children's negative self-statements consist of a higher-order factor, namely negative affectivity, and four second-order factors, namely thoughts of personal failure, thoughts of social threat, thoughts of physical threat, and thoughts of hostility (Schniering & Rapee, 2004).

Related to the above, it was found that anxious children both make and report more negative self-statements in relation to positive statements compared to less anxious children (Prins 1985; Prins, Groot, & Hanewald, 1994; Ronan & Kendall, 1997). Also, it was found that a negative self-talk ratio, but not a positive self-talk ratio, is a significant predictor of both anxiety symptoms and the severity of the anxiety symptoms experienced (Treadwell & Kendall, 1996). Compared to previous studies, Ronan and Kendall demonstrated that both children with anxiety and depression are inclined to significantly more negative self-statements compared to normal control children. In addition, children with depression comorbid to anxiety are inclined to significantly more negative self-statements than both control children and children with either anxiety or depression alone.

Additionally, negative statements that children make under stressful situations were explored. Negative self-statements are related to both state and trait anxiety, when children are exposed to a stressful situation. Conversely, trait anxiety explains a significant amount of the variation in negative self-talk (Lodge, Harte, & Tripp, 1998). It has also been demonstrated that during a stressful situation, highly anxious children report more coping self-statements (attempts to control their anxiety) more off-task thoughts (thoughts unrelated to the task), yet also more on-task thoughts (self-statements related to the task) compared to less anxious children. Furthermore, highly anxious children's coping self-statements are negatively correlated with performance on a task (Prins et al., 1994). Previously it has been reported that coping self-statements are correlated negatively to children's performance on a task (Zatz & Chassin, 1985). In contrast with this, Prins and Hanewald (1999) found that, when controlling for the effect of negative self-evaluations, coping self-statements were not a significant predictor of performance on a task and thus is not directly related to poorer task performance.

Also, the effect has been explored that treatment programmes have on the number of negative self-statements anxious children make. Participants from the study by Treadwell and Kendall (1996) were treated with a CBT programme. Results revealed that children who received treatment reported a reduction in the number of negative self-statements, yet not an increase in the number of positive self-statements, as opposed to the children in the control condition who had neither a decrease in negative self-statements nor an increase in positive self-statements. After treatment, negative self-talk was a significant predictor of the severity of anxiety symptoms. This finding is consistent with treatment outcome studies in adults, where effective treatment was associated with improvement of SOM ratios (Michelson, Schwartz, & Marchione, 1991).

Yet another cognitive factor that has been implicated in childhood anxiety is cognitive content. According to the content specificity hypothesis, different forms of psychopathology are associated with specific types of cognitive content. For example, in people with depression, cognitive content revolves around themes of loss and failure. In the case of anxiety disorders, cognitive content focuses on themes of danger (Beck, 1976). Although certain studies have failed to fully support the content specificity hypothesis with regards to anxiety (Greenberg & Beck, 1989; Laurent & Stark, 1993), other studies have indeed found support for the content specificity hypothesis for anxiety in children (Ambrose & Rholes, 1993; Epkins, 2000; Leung & Poon, 2001; Schniering & Rapee, 2004).

More specifically, a recent study supporting the content specificity hypothesis found that each cognition of social threat, and negative evaluation is a significant predictor of anxiety symptoms in children and adolescents (Schniering & Rapee, 2004). Moreover, it was demonstrated that it is possible to distinguish children with internalising symptoms, such as anxiety or depression, from children with externalising symptoms, such as aggression or conduct disorder, on the basis of cognitive content (Epkins, 2000).

Taken together, literature suggests that there are distinctive cognitive patterns present in children who suffer from excessive anxiety symptoms. For example, anxious children evidence attention bias, that is their attention is directed towards threatening stimuli. Also, anxious children are inclined to cognitive distortions, such as overgeneralisation, catastrophising, and personalising. In addition, when presented with ambiguous stimuli, anxious children are more inclined to interpret these stimuli as threatening than normal control children. It has also been established that children who experience anxiety symptoms are more inclined to making negative self-statements in general and in stressful situations. Finally, the cognitive content of anxious children surrounds themes of treat.

Since maladaptive cognitions are thought to be related to behaviour and affect in childhood anxiety, interventions should address these aberrant cognitions when trying to address the problem of childhood anxiety.
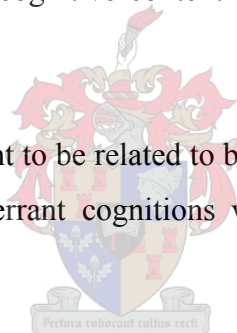
3.4 Interventions for childhood anxiety

3.4.1 Treatment of childhood anxiety

Cognitive behavioural therapy (CBT) is an empirically supported treatment, recognised by the American Psychological Association as a *probably efficacious* treatment for childhood anxiety disorders (Ollendick & King, 1998). This form of treatment makes use of both cognitive and behavioural techniques (Kendall, 1993; Nevid et al., 2000) to modify cognitions, behaviour and affect (Kendall, 1985; Kendall; Strauss & Miller, 1990) in the treatment of psychopathology.

In essence, CBT aims at teaching children to recognise maladaptive thoughts and how to change them (Mash & Wolfe, 2002), since it is thought that maladaptive behaviour originates from maladaptive cognitions (Ollendick & King, 1998). CBT also focuses on behaviour modification via methods like exposure, skills training and relaxation training (Mash & Wolfe). According to Albano and Kendall (2002) most CBT treatments for childhood anxiety disorders contain five components, namely psycho-education, training in somatic management skills, cognitive restructuring, exposure,

and relapse prevention. Various studies have investigated the effectiveness of CBT treatment programmes for childhood anxiety.

In one of the first randomised clinical investigations into the use of CBT with childhood anxiety disorders, a sample of 47 children were assigned to either a wait-list control condition, or the treatment condition using the "coping cat" programme. At post-treatment 64% of the children in the treatment group no longer met the diagnosis of any anxiety disorder. At one-year follow-up, it was found that treatment outcomes were maintained (Kendall, 1994). Later, as part of a long-term follow-up, participants of their previous study were reassessed, where it was found that the treatment outcomes were still maintained (Kendall & Southam-Gerow, 1996). In a second randomised control study by Kendall, et al. (1997) with children with anxiety disorders (n = 94), findings indicated that 53% of participants no longer met diagnostic criteria at post-treatment and that treatment outcomes were maintained at one-year follow-up.

Following on the work of Kendall (1994), the researchers Barrett, Dadds et al., (1996) investigated the effectiveness of CBT that included parental involvement for the treatment of childhood anxiety. Participants (n = 79) were assigned to one of three treatment conditions, namely a wait-list control condition, CBT condition or CBT with family management condition. Results at post-treatment indicated that both the CBT condition and the CBT including family management condition resulted in a significantly better outcome than the wait-list control group condition. Furthermore, the difference in outcome between the CBT condition and CBT including family management was significant, in that significantly fewer children met the diagnosis for an anxiety disorder in the CBT including family management condition than the children in the CBT condition. At both 6-months and 1-year follow-up treatment outcomes were maintained, with the CBT including family management condition that continued to have significantly better results than the CBT condition.

Investigations have also been conducted into whether CBT for childhood anxiety can be effectively conducted as group therapy. A randomised clinical trial, in which 60 children participated, found group CBT equally as effective as individual CBT. These results were maintained at 1-year follow-up (Barrett, 1998). In conjunction, comparing a brief group CBT with a wait-list control group in children that met the diagnostic criteria of social phobia, Gallagher, Rabian, and McCloskey (2004) found that at 3-week follow-up, children in the treatment group experienced less social anxiety, on both self-report and clinical assessment, than the wait-list control group.

The "coping koala" programme, a modification of Kendall's (1994) "coping cat" programme and precursor to the FRIENDS programme, has also shown to be effective for the amelioration of childhood anxiety. One study, where the treatment programme was conducted as group therapy and included parental sessions, reported that at post-treatment both the control group (n = 67) and the treatment group (n = 61) had improved. Yet there was no significant difference between the two treatment conditions. However, at 6-months follow-up the treatment group had significantly improved over the control group. Results further indicated that, at the 6-months follow-up period, the programme successfully reduced the incidence of anxiety disorders in children who previously met the diagnosis for an anxiety disorder. Also, the programme prevented the onset of an anxiety disorder in children who were sub-clinical prior to treatment (Dadds, Spence, Holland, Barrett, & Laurens, 1997). The participants of the study were followed up 2 years later (Dadds, et al., 1999) and again also 6 years later (Barrett, Duffy, Dadds, & Rapee, 2001); in both instances it was found that the treatment outcomes were still maintained.

Comparing the "coping koala" to other forms of treatment, Muris, Meesters, and Van Melick (2002) assigned highly anxious children to an emotional disclosure condition, an intervention or a control condition. At post-treatment, children in the intervention group had a significant reduction in anxiety symptoms compared to both the emotional disclosure condition and the no control condition.

As previously mentioned, substance use and depression are two of the comorbid disorders of anxiety (Mash & Wolfe, 2002). Research has also been conducted into the effect CBT for childhood anxiety has on the occurrence of these two disorders. In a follow-up study of participants who were treated in the study by Kendall et al., (1997), researchers found that 80.5% of participants no longer met the diagnostic criteria for an anxiety disorder, thus indicating that the treatment outcomes were maintained. Results further indicated that the anxiety treatment was not successful in preventing the development of mood disorders, although the anxiety treatment was able to reduce the likelihood of substance use problems (Kendall, Safford, Flannery-Schroeder, & Webb, 2004). Another study that evaluated the outcome of CBT treatment for anxiety disorders on adolescent functioning, followed up participants 6 to 7 years after their initial treatment. The treatment used in the initial study, was the "coping bear", a modification of Kendall's (1994) "coping cat" programme. It was found that almost all of the adolescents in the follow-up study occasionally experienced some symptoms of anxiety, but that only 30% of the participants went for further treatment after completing the "coping bear" programme. Encouragingly enough, 51% of the participants reported that they still

used the breathing techniques they learned in the programme and 9% reported using coping self-talk (Manassis, Avery, Butalia, & Mendlowitz, 2004).

To recap so far, numerous studies have investigated the effectiveness of childhood anxiety treatment programmes based on cognitive behaviour therapy. A body of evidence suggests that these treatment programmes either effectively prevent the onset of a full-blown anxiety disorder for sub-clinical children, or effectively reduce the anxiety of clinically anxious children. Also, these treatment programmes have shown to be successful when implemented either as individual or group therapy. Furthermore the addition of parental sessions to those of child sessions have been demonstrated to be effective, even more effective than child sessions alone. When compared to either control conditions or alternative treatment conditions, it seems that cognitive behavioural therapy based programmes are either equally effective, or more effective in ameliorating anxiety symptoms.

3.4.2   Prevention of childhood anxiety disorders

The aim of prevention is to avert the onset of a disorder before any symptoms arise (Sadock & Sadock, 2003). This reduces the financial and emotional cost of intervening once the disorder has set in (WHO, 2004). Prevention of anxiety disorders during childhood has the benefit that maladaptive behaviours are less fixed and are thus easier to modify than in older children or adults (Hirshfeld-Becker & Biederman, 2002). Also, in South Africa, Government follows a primary health care model where prevention is an important strategy to enhance mental and physical health (Department of Health, 1997).

Lately in the field of childhood anxiety the focus has also fallen on constructing prevention programmes, one of which is the "FRIENDS" programme. By further extending Kendall's (1994) "coping cat" and her own the "coping koala" programme, Barrett and her colleagues developed the "FRIENDS" programme aimed at prevention and early intervention for children between the ages of 7 and 11 years (Barrett, Webster et al., 2000). Since the construction of the programme, numerous outcome studies have been conducted.

In one such study, the "FRIENDS" programme was implemented as a family-based group CBT. Participants ($n = 71$) who met the criteria for an anxiety disorder, were randomly assigned to either a treatment group or a wait-list control group. At post-treatment, results indicated that the treatment group had significantly improved over the wait-list control group in that 69% of the children in the

treatment group no longer met a diagnosis for an anxiety disorder. The outcomes of the programme were still maintained at 12-months follow-up (Shortt, Barrett, & Fox, 2001).

The effectiveness of the FRIENDS programme within a school setting has also been explored (Barrett & Turner, 2001). In one such study, the programme evaluation aimed at determining the effectiveness of the FRIENDS programme in preventing childhood anxiety and whether the programme can be effectively implemented as part of a school curriculum. Participants were identified as either being "at risk" or "healthy" and then assigned to one of three treatment conditions; an intervention condition conducted by a psychologist ($n = 188$), an intervention condition conducted by a teacher ($n = 263$) or a monitoring condition ($n = 137$). Results indicated that there was a significant reduction in anxiety symptoms for the children who received the intervention by either the psychologist or the teacher, compared to the monitoring group who had no significant reduction in anxiety. However, there was no significant difference between the group that received the intervention by the psychologist or the group that received the intervention by the teachers, thus illustrating that teachers were just as effective in conducting the intervention. At post-treatment "at risk" children who received the intervention were more likely to have moved into the "healthy" range compared to "at risk" children in the monitoring group (Barrett &Turner).

In a larger school based investigation, the effectiveness of the FRIENDS programme as part of the school curriculum was assessed (Lowry-Webster, Barrett, & Lock, 2003). This was done by comparing children in schools where the intervention was implemented to children in schools where it was not implemented. In total some 594 children participated in the study. In addition, children's anxiety scores were "labelled" as either being at-risk or not-at-risk. Although children from both the control condition and the intervention condition's anxiety scores on the SCAS improved significantly from pre-test to post-test, the improvement was more marked for the intervention condition. For children "labelled" as at-risk during pre-test, 75.3% of the children who received the intervention were no longer at risk during post-test, compared to 42.2% of children in the control condition who were no longer at-risk during post-test (Lowry-Webster, Barrett, & Dadds, 2001). Children from this study were followed-up one year later to assess the maintenance of the treatment outcomes. Results revealed that the children in the intervention condition scored significantly lower on the SCAS, compared to the scores of the children in the control condition. In addition, the 12-month follow-up scores were significantly lower than at post-test for the children in the intervention condition. Of the children in the intervention condition, 91.4% who were not-at-risk at post-test remained not-at-risk during 12-month follow-up compared to 74.8% of children in the control condition who remained not-at-risk at 12-month follow-up (Lowry-Webster et al., 2003).

From the above it may be deduced that the FRIENDS programme yields potential within a school setting, as it has been established that teachers can just as effectively implement the intervention compared to mental health professionals.

The Australian FRIENDS programme has also been found to be helpful in alleviating anxiety in children from non-Australian backgrounds. For example, researchers implemented and evaluated the effectiveness and social validity of the FRIENDS programme with Yugoslav refugees in Australia. Results indicated that the children ($n = 9$) in the intervention group's anxiety scores were significantly lower at post-test than at pre-test, whilst the children ($n = 11$) in the wait-list group's anxiety scores were significantly higher at post-test than at pre-test. In addition, participants were also assessed for their inclination towards making threatening interpretations from ambiguous stories. At post-treatment the intervention group were significantly more inclined towards non-threatening interpretations, compared to the wait-list group (Barrett, Moore, & Sonderegger, 2000). Since the FRIENDS programme was found successful in reducing the anxiety symptoms of non-Australian children, the question could well be posed whether the FRIENDS programme could just as successfully be applied to the South African context. However, no studies investigating the effectiveness of the FRIENDS programme with South African children have been conducted as yet.

Regarding the social validity of the FRIENDS programme, parents and children's perceptions of the usefulness of the information and skills in the programme have been evaluated. Results, amongst others, indicated that most parents would recommend the programme to other parents. According to those parents the information of session 7 (graded exposure) was very useful, whereas the information in session 7 (identifying and communicating emotions) were less useful. Between 47.2% and 89.1% of children reported that they could easily complete the homework assignments. "Rewarding brave behaviour" and "identifying inner thoughts" were regarded by parents as very useful skills to their child, whilst the "problem-solving plan" and "relaxation techniques" were regarded as less useful skills to their child. Comparably, children regarded "rewarding brave behaviour" as a more useful skill, whilst "identifying feeling worried", "problem-solving plan", and "inner thoughts" were regarded as less useful skills. Notwithstanding, 40.9% of children reported that they used the skills frequently, with 56.8% who reported using the skills on occasion, and a total of 77,3% of children regarded the programme as being fun (Barrett, Short, Fox, & Wescombe, 2001). In another investigation into children's perceptions of the FRIENDS programme, Lowry-Webster et al. (2003) found that most children enjoyed the programme to some extent. Most children reported that they had learnt somewhat to cope with anxiety and that they used the skills they were taught. In addition, most parents felt that it was somewhat important to implement the

programme as part of the curriculum and reported improving their child's coping skills to some extent. Teachers, on the other hand, rated the programme more favourably. Most teachers felt that the FRIENDS programme greatly enhanced the existing curriculum and that it was most useful for enhancing children's coping skills.

Additionally, with regard to children from non-Australian backgrounds, researchers found the FRIENDS programme to have good social validity. Yugoslav participants rated the programme as useful in helping them cope with anxiety-provoking situations. However, they had made certain suggestions for the improvement of the programme, such as incorporating more aspects related to culture and migration (Barrett, Moore et al., 2000). These results are comparable to the results of a larger study, where it was again found that the intervention successfully reduced the anxiety symptoms of children ($n = 204$) from various non-Australian backgrounds, to all of whom English was not their mother tongue. Once more, with regard to social validity, participants suggested that the programme should be more relevant to their culture (Barrett, Sonderegger, & Sonderegger, 2001).

Recently the World Health Organization (WHO) endorsed the FRIENDS programme as an effective prevention programme for childhood anxiety (WHO, 2004).

To recapitulate what has been discussed, various outcome studies have been conducted into the effectiveness of the FRIENDS programme. All in all, results from these studies indicate that the FRIENDS programme effectively reduces children's anxiety symptoms, compared to either a control condition or alternative treatment condition. Applied as a group therapy in a school setting, the FRIENDS programme still successfully reduces anxiety symptoms. Moreover, it has also been demonstrated that the programme can effectively be implemented by persons other than mental health professionals. Even though the FRIENDS programme is an Australian based programme, research has demonstrated that the programme can effectively reduce anxiety symptoms in children from a non-Australian background. Furthermore, the FRIENDS programme has also demonstrated to be socially valid according to feedback from participants from either an Australian or non-Australian background. Therefore, the current study aimed at replicating the study by Barrett and Turner by implementing the intervention universally within a school setting and determining on anxiety scores. However, in addition to the study by Barrett and Turner (2001), the current study also explored the effect the FRIENDS programme has on self-efficacy.

3.5   Self-efficacy

Since it has been demonstrated that low self-efficacy is associated with anxiety in adults (Nevid et al., 2000) and the same is thought to hold true for children (Muris, 2002; Prins, 2001), some attention needs to be given to the construct of self-efficacy.

Self-efficacy was previously defined as a person's evaluation of his/her ability to competently use certain skills or perform certain behaviour to meet the expectations of a given situation (Bandura, 1997). As such, self-efficacy refers to a person's belief of whether or not he/she is able to use certain skills within a given situation in order to perform a certain action, and not to whether or not he/she possess certain skills. In situations where a person has a high sense of self-efficacy, he/she will confidently perform a given behaviour, whereas having low self-efficacy can cause poor performance or avoidance of the situation (Bandura, 1986).

Self-efficacy is thought to have a unique contribution in the etiology of anxiety. In fact, Bandura, Taylor, Williams, Mefford, & Barchas (1985) argue that "self-efficacy is a cognitive mediator of the anxiety reaction (p.411)". According to Bandura (1997), self-efficacy mediates affective states through its influence on three domains; namely cognition, behaviour, and affect. In the cognitive domain, self-efficacy for dealing with threatening situations influences both how these situations are perceived and cognitively processed. If a person perceives him/herself as unskilled for dealing with a situation, the situation, therefore, is perceived as more threatening, which in turn contributes to anxiety. In the behavioural domain, self-efficacy influences both control over the environment and control over thoughts. With regard to control over the environment, self-efficacy influences the courses of action taken to deal with a potentially threatening situation, thereby either increasing or lessening anxiety. Having to deal with a situation for which one has little coping efficacy increases anxiety arousal. Furthermore, in the case of control over thoughts, self-efficacy influences the perception of whether a person is able to keep worrying or aversive thoughts at bay. The perception that one is unable to control negative thoughts increases anxiety arousal. Finally, in the affective domain, self-efficacy influences the perception of whether a person is able to regulate negative emotions when they arise. The perception that one is unable to relieve anxiety when it arises makes anxiety more aversive.

The reverse is also true: raising self-efficacy in dealing with a feared situation lowers anxiety (Bandura, 1997). Therefore, Bandura stresses the need for effective anxiety interventions to focus on raising self-efficacy. In fact, it has been speculated that the relative success of anxiety interventions for children may lie in the enhancement of children's sense of efficacy in dealing with

feared situations (Muris, 2002). Taking into consideration both previous statements, in conjunction with the unique role self-efficacy plays in the etiology of anxiety, further investigation is merited into whether effective anxiety intervention- and prevention programmes indeed do enhance self-efficacy. Therefore, the present study investigated, as a sub-aim, whether the FRIENDS programme is able to enhance children's self-efficacy.

The relationship between self-efficacy and symptoms of anxiety has been explored with a sample of adolescents. Overall, low self-efficacy was related to high levels of anxiety symptoms; and - while controlling for the effect of trait-anxiety - self-efficacy accounted for a significant amount of the variance in anxiety symptoms. Furthermore, low self-efficacy in specific domains is related to specific types of anxiety symptoms (Muris, 2002).

In summary, self-efficacy has a unique contribution to anxiety. Whereas the enhancement of self-efficacy for dealing with potentially threatening situations has been shown to lessen anxiety. The contribution that interventions have on lessening anxiety through the enhancement of self-efficacy needs further investigation.

3.6   Chapter summary

This chapter discussed aspects of childhood anxiety, relevant to the focus of the study, such as the prevalence and consequences of childhood anxiety, cognitive features in anxiety in childhood, treatment and prevention of childhood anxiety, and the relation with self-efficacy.

Regarding the prevalence of childhood anxiety, South African literature indicates a higher prevalence of anxiety symptoms among samples of South African children compared to children from other countries. It, therefore, seems that anxiety is a common problem among children from South Africa and needs to be addressed. Additionally, the prevalence differs depending on race and socio-economic status.

The consequences of childhood anxiety are manifold, some of which are a persisting disorder in adulthood, a comorbid anxiety or mood disorder, psychosocial problems and academic problems.

Concerning the interventions for childhood anxiety, both CBT treatments and prevention programmes were discussed. Cognitive behavioural therapy with anxious children aims at modifying the aberrant cognitions that are thought to contribute to the etiology and maintenance of the anxiety problem. Literature indicates that CBT based treatments are effective in ameliorating

anxiety symptoms in children. In addition, the "FRIENDS" programme, a CBT based prevention and early intervention programme for childhood anxiety, has yielded to be effective in reducing anxiety symptoms in children. This programme has been effectively implemented within school settings. As of yet, the effectiveness of the FRIENDS programme has not been investigated with South African children.

Lastly, this chapter discussed the relation between anxiety and self-efficacy. Recent literature suggests that self-efficacy has a unique contribution to the etiology and maintenance of anxiety. Also, since the enhancement of self-efficacy for dealing with potentially threatening situations has been shown to lessen anxiety, it has been suggested that the effectiveness of anxiety interventions may lie in the enhancement of self-efficacy. As of yet, the effect the FRIENDS programme has on the enhancement of children's self-efficacy has not been established and merits further investigation.

The following chapter reports on the methodology used in the present study.
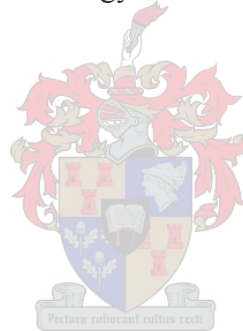
CHAPTER 4

RESEARCH METHODOLOGY

4.1   Introduction

In Chapter 4 the methodology used to obtain the data will be discussed. Firstly, the hypotheses explored by the study are addressed. Also, issues such as the research design used, and method of sampling is discussed. A description of research participants and the intervention programme is provided. An overview follows, including the psychometric properties, of each of the three questionnaires that were used. Next follows a detailed description of data collection, that includes four testing times and the intervention with the intervention- and wait-list control group. Finally, a short overview of the data analysis is provided.

4.2   Hypotheses

The primary aim of this study was to explore whether the FRIENDS programme is effective in reducing anxiety symptoms in a sample of South African children. And as a sub-aim the present study explored the effect of the FRIENDS programme on children's self-reported self-efficacy. For this purpose the current study examined six hypotheses that can be grouped in two categories. The first set of hypotheses relates to differences between the intervention and wait-list control group, whilst the second set of hypotheses relates to differences within each group over time.

4.2.1   Hypotheses pertaining to between group effects

4.2.1.1   Time 1

It was hypothesised that there would be no difference between the intervention group and the wait-list control group on the measures of anxiety and self-efficacy.

4.2.1.2   Time 2

It was further hypothesised that the anxiety scores of the intervention group would be significantly lower compared to the wait-list control group, and that the self-efficacy scores of the intervention group would be significantly higher compared to the wait-list control group.

4.2.1.3   Time 3

It was hypothesised that the anxiety scores of the intervention group would still be significantly lower than the wait-list control group, whereas the self-efficacy scores of the intervention group would still be significantly higher than the wait-list control group.

4.2.1.4   Time 4

Finally, it was expected that there would be no significant difference between the anxiety and self-efficacy scores of the intervention group and the wait-list control group.

4.2.2   Hypotheses pertaining to within group effects

4.2.2.1   Intervention group

It was hypothesised that for the intervention group there would be a significant reduction in anxiety scores and a significant increase in self-efficacy scores from Time 1 through Time 4.

4.2.2.2   Wait-list control group

Secondly, it was hypothesised that for the wait-list control group there would be a significant reduction in anxiety scores and a significant increase in self-efficacy scores between Time 3 and Time 4.

4.3   Research design

In order to compare research outcomes, the design of the current study was based on the study by Barrett and Turner (2001) where the FRIENDS programme was implemented as a universal school-based intervention and evaluated as such.

Social research directed at determining the value or effectiveness of a given programme is considered to be a programme evaluation (Babbie & Mouton, 2001) Therefore, the present study can be classified as a programme evaluation with the intended goal of evaluating the effectiveness of the FRIENDS programme.

The aim of programme evaluation, according to Potter (1999), is to acquire knowledge about a social programme, whether it be acquiring knowledge about the need for the given programme, planning the given programme, monitoring the implementation of the programme, or assessing whether the outcomes of the programme have been reached. The present study falls into the latter category of assessing whether the programme outcomes of the FRIENDS programme were reached. According to Babbie and Mouton (2001), whenever a programme evaluation intends to determine the effectiveness of a given programme, it is referred to as an *outcome evaluation.* Thus outcome evaluation has to establish whether participants have changed over the course of their involvement in the programme, and whether that change may be ascribed to the programme or to other factors. Hence the present study is an outcome evaluation of the FRIENDS programme as the study

explored whether or not participation in the FRIENDS programme is related to change in anxiety and self-efficacy profile.

Programme evaluation, however, is not a unique research design in and of itself, but rather a modification of common research designs that best fit the restrictions of the situation, yet still ensures as high constraint as possible over the research (Graziano & Raulin, 2004). In fact, Babbie (2004) states that "programme evaluation can be seen as more of a rationale than a distinct method (p.342)".

Quasi-experimental designs are commonly used for the purposes of programme evaluation (Graziano & Raulin, 2004; Potter, 1999). Although experimental designs are preferred, quasi-experimental designs are used whenever situational restrictions prevent the use of experimental designs (Graziano & Raulin). For the present study, since situational restrictions prevented the random assignment of participants to either a control or experimental group, a quasi-experimental design was used in the form of a non-equivalent control group design. As it would have been unethical to withhold treatment from the control group, a wait-list control group was used instead. The addition of a control group helps to control for the possible confounding effects of maturation, history, and regression to the mean (Graziano & Raulin).

To recapitulate: for the present programme evaluation a quasi-experimental design was used in the form of a non-equivalent wait-list control group design.

4.4   Sampling

Owing to situational constraints, only an ad hoc sample could be drawn from the accessible population of 12-year-old children. When *ad hoc* samples are used, generalisations should be done with caution (Graziano & Raulin, 2004).

4.5   Research participants

A total of sixty-six 12-year-old children (30 girls, 36 boys) from a local school at Stellenbosch were recruited to participate in the study that followed them over a course of 10 months. But the data of only 46 participants could be used during data-analysis, as shall be explained shortly.

The school is set in a formerly disadvantaged neighbourhood in the greater Stellenbosch area, with just more than 6 000 residents. In a report by the Stellenbosch Municipality in 2005, it is estimated that about 90% of the population from this community has formal housing in the form of a house,

flat or cluster house (L. Fourie, Personal communication, May 5, 2006). The census of 2001 reported that for this neighbourhood, 65% of the respondents had a monthly household income of R1 600 or less, 32% of respondents had a monthly household income of between R1 600 and R12 800, with fewer than 2% of respondents having a monthly household income of R12 800 or more (L. Fourie, Personal communication, May 5, 2006). Compared to other areas in Stellenbosch, most of the residents from this neighbourhood are of the lower-income range. Hence participants from this school were from a less economically privileged community.

In a recent survey report by the Stellenbosch Municipality, the community where the study was conducted is described as being "largely a coloured area" (L. Fourie, Personal communication, May 5, 2006). This is reflected in census data of 2001 where more than 95% of respondents reported being coloured, followed by black, white and indian individuals (L. Fourie, Personal communication). According to the Stellenbosch Municipality, the neighbourhood is predominantly an Afrikaans speaking community (more than 90% of the population), with English and Xhosa being the second and third most common home languages respectively (L. Fourie, Personal communication). Consequently participants in the study were mainly from Afrikaans speaking households and received their education in Afrikaans at school.

Following enrolment in the study, participants were enrolled in either one of two situations: an intervention group or a wait-list control group. However, situational constraints prevented the random assignment of participants to either the intervention group or the wait-list control group. Therefore, one class was assigned to the intervention condition and the other assigned to the wait-list control condition. Hence the study used the quasi-experimental design named non-equivalent control group design. A total of 32 children (14 girls, 18 boys) were enrolled in the intervention group whilst 34 children (16 girls, 18 boys) were enrolled in the wait-list control group.

At the time of data-analysis, the data of only 46 participants (22 girls, 24 boys) with a mean age of 12 years, 6 months ($SD = 9.12$ months) could be used. There are three main reasons for this: Firstly, attrition accounted for 8 participants (4 participants in the intervention group, 4 participants in the wait-list control group) leaving the study; secondly, incomplete questionnaire data (participants who were absent during one of the four times of testing) accounted for 11 participants' data (4 participants in the intervention group, 7 participants in the wait-list control group) being eliminated from statistical analysis; and lastly, 1 participant in the intervention group did not follow the instructions when filling in the questionnaires, which resulted in that participant's data being eliminated from the statistical analysis. Hence it yielded an intervention group of 25 participants (13

boys, 12 girls) with a mean age of 12 years, 6 months (SD = 10.06 months); and a wait-list control group of 21 participants (16 boys, 5 girls) with a mean age of 12 years, 6 months (SD = 8.14 months). In this regard it is important to note that within small sample sizes statistical power is reduced (Graziano & Raulin, 2004). In other words, within a small sample there is a greater risk of falsely not rejecting the null hypothesis.

4.6   Intervention programme

As mentioned previously, the "FRIENDS" programme is a well-researched, evidence-based early intervention- and prevention programme (Barrett, 2004). It is on these grounds that the "FRIENDS" programme was considered to be an appropriate intervention programme to implement with participants to the present study. For the present study, the latest version of the FRIENDS programme (Barrett) was used.

The "FRIENDS" programme (Barrett, 2004) is a cognitive behaviour therapy-based early intervention and prevention programme, designed for children between the ages of 7- and 11 years, that uses child-friendly activities that teach children coping skills and problem-solving techniques for dealing with anxiety and depression. The programme can be used with either clinical children to return their anxiety to the non-clinical range, or with non-clinical children to enhance their resilience through additional coping skills. A major advantage of the programme is that it is intended for use within natural environments, such as a school setting. The content of the activities is structured such to deal with the three components – namely cognitive, physiological, and behavioural – that are thought to be involved in the onset and maintenance of anxiety. For example, in the cognitive domain, children learn to engage in positive self-speech and how to reward themselves for partial successes. In the physiological domain, children learn to recognise the physiological changes during anxiety; where the relaxation techniques that are taught help anxious children relax. In the behavioural domain, children are taught problem solving; whilst graded exposure guides children to face, instead of avoid, their anxiety provoking situations (Barrett).

The programme is designed such that it can be implemented in groups of ideally 10 to 12 participants. Yet the programme can also be implemented in larger groups, such as a classroom setting (Barrett, 2004). The "FRIENDS" programme consists of 10 sessions of between 45-60 minutes each, and it is recommended that one session per week be conducted. During each session a new skill is taught for effectively dealing with anxiety. The programme also provides for four parent sessions and two booster sessions for children, and it is recommended that these be conducted (Barrett).

The acronym "FRIENDS" summarises the skills that are taught by the programme whereby helping children to remember what they have learned. The acronym is as follows:

F = Feeling worried?

R = Relax and feel good

I = Inner thoughts

E = Exploring plans

N = Nice work – reward yourself!

D = Don't forget to practise

S = Stay calm!

The materials of the programme consisted of Group Leaders' Manuals and 66 Children's Workbooks (Barrett, 2004). These were purchased from the Pathways Health and Research Centre, Brisbane, Australia at the onset of the study.

4.7 Measuring instruments

Replicating the Barrett and Turner (2001) study, two standard self-report anxiety questionnaires, the Spence Children's Anxiety Scale (SCAS) (Spence, 1997) and the Revised Children's Manifest Anxiety Scale (RCMAS) (Reynolds & Richmond, 1978), were used to assess the anxiety status of each participant on four occasions. In addition to this, and in contrast with the Barrett and Turner (2001) study, a self-report self-efficacy questionnaire, the Self-Efficacy Questionnaire for Children (SEQ-C) (Muris, 2002) was used to assess the self-efficacy levels of participants on each of the four occasions.

It should be noted, however, that self-report measures for childhood anxiety is not without its limitations. Commonly, anxious children tend to give socially desirable answers that lead to under-reporting of anxiety symptoms (Kendall & Chansky quoted in Ronan, 1996).

Since participants were Afrikaans speaking and/or used to receiving their formal schooling in Afrikaans, Afrikaans language versions of the questionnaires were used.

Permission for the use of the SCAS (Spence, 1997) was obtained from the author. The Afrikaans version of the scale, as used in the study by Perold (2001), was used in the present study. In the case of the RCMAS (Reynolds & Richmond, 1978), which is available on the internet, the scale was translated by a professional translator from English to Afrikaans. The accuracy of the translated

version of the scale was then verified by a bilingual registered research psychologist who is an expert in the field of anxiety disorders. For the SEQ-C (Muris, 2002), permission for the use and translation of the questionnaire was obtained from the author. The questionnaire was translated from Dutch to Afrikaans by a professional translator. The accuracy of the translated version of this scale was verified by a bilingual master's student in psychology. The alpha values for the Afrikaans version of each questionnaire are reported in Chapter 5.

4.7.1   Spence Children's Anxiety Scale (SCAS) (Spence, 1997)

The SCAS was developed with a normative sample of children (n = 2052) between the ages of 8 and 12 years (Spence, 1997). As mentioned earlier, it has been demonstrated that children's anxiety symptoms tend to cluster into six distinct, yet correlated factors; all of which correspond to a second-order factor, that of anxiety. These six factors are largely consistent with the categories for anxiety disorders of the DSM-IV. The SCAS was designed to measure children's self-reported anxiety symptoms in those six domains, namely that of social phobia, obsessive-compulsive disorder, separation anxiety, generalised anxiety, panic-agoraphobia and fears of physical injury (Spence, 1997, 1998). The domain "fears of physical injury" was designed such that it taps into specific phobias. The SCAS is intended to measure anxiety symptoms and was not intended as a diagnostic tool. However, a value of 42.48 or more is considered to indicate clinical significance (Spence, 1997).

The SCAS consists of 44 items in total, 38 of which assess anxiety symptoms and six items serving as filler items. The child rates each item on a 4-point Likert-type scale ranging from "0 = never" to "3 = always" (Spence, 1997). Thus the scale measures the frequency of the anxiety symptoms instead of the intensity (Spence, 1998). Regarding the psychometric properties of the scale, the SCAS has been shown to have good internal consistency, test-retest reliability and convergent validity. Concerning the internal consistency, an alpha value of .92 has been computed for the complete scale (Essau, Muris, & Ederer, 2002; Spence, 1998) with the subscales having alpha values ranging between .60 and .82 (Spence, 1998). Also, in a sample of young adolescents aged 13 through 14, the SCAS total scale was found to be internally consistent (α=.92) (Spence, Barrett, & Turner, 2003). With prior use in a South African sample, the SCAS demonstrated an alpha value of .92 for the total scale (Muris, Schmidt, et al., 2002). The scale has also demonstrated to have a Guttman split half reliability of .90 (Essau et al., 2002; Spence, 1998; Spence et al., 2003).

The test-retest reliability seems to be satisfactory, since 6-month test-retest procedures yielded a correlation of .60 for the total scale and values ranging between .45 and .57 for the subscales

(Spence, 1998). In a sample of young adolescents the test-retest reliability coefficient was demonstrated to be .63 at 12 weeks for the total SCAS scale (Spence et al., 2003).

The SCAS has good convergent validity with other anxiety scales. The total scale of the SCAS is correlated with the total score of the RCMAS; with a correlation coefficients reported ranging between .71 (Spence, 1998) and .75 (Spence et al., 2003). Recently, it has been shown that the SCAS total scale is correlated with the SCARED total scale (r=.85) (Essau et al., 2002) and with the total scale of the STAIC (r=.79) as well as the total scale of the FSSC-R (r=.76) (Muris, Merckelbach, et al., 2002). Contrary to what is expected, the SCAS is significantly correlated with the Children's Depression Inventory with some studies reporting a correlation coefficient of .48 (Spence, 1998) or .60 (Spence at al., 2003) while other studies report a correlation coefficient as high as .72 (Muris, Merckelbach, et al., 2002). Nevertheless, the SCAS has also shown to be able to discriminate between clinical and non-clinical children (Spence 1998).

4.7.2 Revised Children's Manifest Anxiety Scale (RCMAS) (Reynolds & Richmond, 1978)

Reynolds and Richmond (1978) revised the Children's Manifest Anxiety Scale in a group of children ages 6 through 19 years. This resulted in the Revised Children's Manifest Anxiety Scale (RCMAS) consisting of 37 items, 28 of which measures anxiety (Reynolds & Richmond) with the remaining nine items measuring social desirability (Reynolds, 1981). The total scale is subdivided into four scales, namely the "Lie Scale" (which measures social desirability) "Physiological Anxiety", "Worry-Over Sensitivity" and the "Concentration" scale (Reynolds & Paget, 1983). A factor analysis revealed that the scale indeed consisted of the intended factors (Reynolds & Paget, 1981).

The scale is completed by answering "yes" or "no" to the corresponding items on the questionnaire. A total score can then be acquired by counting the number of "yes" responses, excluding the "yes" responses of the lie scale. Norms have been constructed for children from age 6 through age 19. A total anxiety score of 1 SD above the mean for the child's age group could be indicative of anxiety (Reynolds & Paget, 1983).

Regarding the psychometric properties of the RCMAS, the questionnaire was found to have good internal consistency, with alpha values of .87 (Turgeon & Chartrand, 2003) and .89 (Muris, Merckelbach, et al., 2002) being reported for the total scale.

The test-retest reliability has been demonstrated as good. Reynolds (1981) reported a 9-month test-retest reliability coefficient of .68 for the anxiety score and a coefficient of .58 for the lie scale. Turgeon and Chartrand (2003) reported a test-retest reliability coefficient of .67 for the total anxiety score, a value closely related to that of Reynolds.

Further, it has been demonstrated that the RCMAS has good convergent validity. The total scale of the RCMAS is moderately to strongly correlated with the total scale of other anxiety questionnaires such as: the State-Trait Anxiety Inventory for Children (STAIC) (r=.88), the Fear Survey Schedule for Children-Revised (FSSCR) (r=.63), and the Spence Children's Anxiety Scale (SCAS) (r=.76) (Muris, Merckelbach, et al., 2002), as well as the Screen for Child Anxiety Related Emotional Disorders (SCARED) (r=.85) (Muris et al., 1998; Muris, Merckelbach, et al., 2002). In contrast, Reynolds (1980; 1982) found only the Trait Scale of the two subscales on the STAIC to be significantly correlated with the total scale of the RCMAS.

Apparently the RCMAS does not have satisfactory divergent validity, since several studies have found the total scale of the RCMAS to be correlated with the Children's Depression Inventory, a measure of depression (Hodges, 1990; Muris, Merckelbach, et al., 2002) Some studies report correlation coefficients as high as .70 (Hodges), and .72 (Stark & Laurent, 2001), as well as .74 (Muris, Merckelbach, et al., 2002). A joint factor analysis, using the Children's Depression Inventory, indicated that only 7 items in the RCMAS uniquely measure anxiety (Stark & Laurent).

Another criticism against the RCMAS is the finding that the total score of the questionnaire fails to discriminate between children with anxiety disorders and children with other forms of psychopathology. Respectively, the specificity and sensitivity were calculated to be 92% and 34% for the RCMAS (Hodges, 1990). An interesting finding in this respect is that lie scale scores seem to differentiate between anxiety disordered children with co-morbid anxiety disorders and anxiety disordered children with disruptive disorders – with the former group having significantly higher lie scale scores than the latter group. The lie scale scores, however, do not seem to differ between children with different types of anxiety disorders (Pina, Silverman, Saavedra, & Weems, 2001).

Another finding with regard to the lie scale is that the scores on the lie scale seem to differ significantly among age, with younger children having higher lie scale scores than older children, and ethnicity, with Hispanic American children having higher lie scale scores than Caucasian American children. However, scores do not seem to significantly differ between genders (Pina et al., 2001).

4.7.3 Self-efficacy Questionnaire for Children (SEQ-C) (Muris, 2002)

The Self-Efficacy Questionnaire for Children (SEQ-C) is a 24-item scale, constructed to measure children's self-efficacy in three domains, namely social self-efficacy, academic self-efficacy and emotional self-efficacy. The questionnaire is completed by rating each item on a 5-point Likert scale ranging from "1 = not at all" to "5 = very well" (Muris, 2002).

An exploratory factor analysis of the SEQ-C indicated that the scale consisted of three factors with each item loading significantly onto the intended factor, except item 23 that did not load significantly onto any factor. Also, items 1 and 18 that did not load onto their intended factors. Following this, items 1, 18 and 23 were removed (Muris, 2002).

The internal consistency of the SEQ-C was found to be good, with the total scale having an alpha value of .90 and the subscales having alpha values ranging between .82 and .86 (Muris, 2002).

4.8 Data collection procedures

4.8.1 Ethical issues

As mentioned previously, for the present study a non-equivalent control group design was used. However, as not to withhold treatment from participants in the control condition, these participants were enrolled in a wait-list control condition. In other words, participants in the wait-list control condition received the intervention following the intervention with participants in the intervention group.
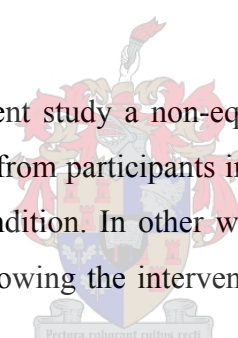
The cut-off marks for clinical significance on both measures were used as a broad screening indication for anxiety problems. In order not to stigmatise any participant, a letter offering additional psychological assistance free of charge was sent to invite all participants experiencing any kind of anxiety related problem at the completion of the study (see Addendum A).

This study's ethical basis was approved by the Ethics Committee, Faculty of Health Sciences of the University of Stellenbosch.

4.8.2 Administrative procedures

Permission to conduct the study at local schools in the Stellenbosch area was also obtained from the Department of Education for 2005 (Addendum B) and 2006 (Addendum C). Following this, the schools were contacted and given a letter of information (Addendum D) outlining the details of the study and requesting a meeting with the principal of each school. A meeting was held with those

schools that consented to an appointment, to explain in detail the purpose and the extent of the study. Following, five schools declined to participate, whilst two consented to the study. After gaining consent for the study from these two schools, a letter of information containing an informed consent form was sent to parents of Grade 6 children (12-year-olds) in both schools (Addendum E). Owing to a low response rate from parents at one school, it was decided to conduct the pilot study at the one school only. Therefore, all the participants in the present study were from a homogeneous school environment.

4.8.3   Time line

The anxiety symptoms and self-efficacy of participants ($N = 46$) were assessed on four occasions during the study. The following time line describes the assessments on the different occasions for each of the two groups:

Time 1:   • pre-intervention assessment for the intervention group (IG)

        • pre-intervention assessment for the wait-list control group (WCG)

Time 2:   • post-intervention assessment for the intervention group (IG)

        • pre-intervention assessment for the wait-list control group (WCG)

Time 3:   • 4-months post-intervention assessment for the intervention group (IG)

        • pre-intervention assessment for the wait-list control group (WCG)

Time 4:   • 6-months post-intervention assessment for the intervention group (IG)

        • post-intervention assessment for the wait-list control group (WCG)

4.8.4   Testing procedures: Time 1

Following the abovementioned administrative procedures, the study commenced by determining the anxiety status of both the intervention group and the wait-list control group using the translated version of the SCAS, RCMAS and the SEQ-C. As previously mentioned, one class was assigned to the intervention condition and the other was assigned to the wait-list control condition. These two classes completed the questionnaires separately during *two consecutive* periods on the same day. Therefore, the participants from the two classes did not have any contact with one another between the two testing periods. To ensure anonymity, a numeric participant-code was assigned to each participant, which was written on each questionnaire.

At the start of the testing procedures participants were instructed in a child-friendly manner to independently fill in the questionnaires whilst covering their work from classmates. Anonymity and confidentiality of information obtained from the questionnaires was also explained in a child-friendly way. Participants were motivated to be honest when completing the questionnaires.

During the testing procedures the researcher read all the questions aloud in an attempt to ensure that participants understood the questions correctly. The researcher paused between each question to allow children to contemplate and choose an answer. Children were allowed a five-minute break during which they could stretch out between each of the three questionnaires. They were instructed to close their booklet of questionnaires during the 5-minute break to ensure that participants would not influence one another. In total, the questionnaires took about 50 minutes to complete. After completion of the questionnaires, the researcher scored all questionnaires. The questionnaires were externally moderated and all discrepancies were corrected by the researcher.

The same independent observer, with honours level training in psychology and having completed a cognitive behavioural theory module, was present during all testing procedures and all sessions.

Following, the data for the intervention- and wait-list control group were analysed to determine whether any significant differences existed between the two groups regarding their anxiety and self-efficacy statuses before the onset of the intervention. This was done to ensure that groups were equal before the commencement of the study. An independent samples T-test was run on the data from the three questionnaires, where it was found that the intervention group and wait-list control group did not differ significantly at the onset of the study regarding their anxiety- and self-efficacy statuses. (See results of this analysis as reported in Chapter 5.) Therefore, participants did not have to be reassigned to the respective groups.

4.8.5   Intervention with intervention group

Prior to the intervention the researcher, being trained in a CBT-module on honours psychology level, was prepared by the supervisor of the project, a registered psychologist, for the intervention. The researcher also took qualitative notes on a session to session basis that was discussed regularly with the supervisor of the study.

The intervention with the intervention group proceeded as follows: First of all, a suitable time for conducting the sessions that would not infringe on children's academics or afternoon sports programmes was negotiated and arranged in collaboration with the school principal. The school

allocated two periods, one hour-long Life Skills period and one hour-long Physical Training period, per week to the intervention because the school's academic programme could not accommodate the intervention within a duration of 12 weeks. Accordingly two sessions per week, on two *consecutive* days of the week, were conducted with the intervention group ($n = 32$) . After completion of the pre-test, the FRIENDS programme was conducted with the participants in the intervention group. Children were not sub-divided into smaller groups, therefore, sessions were conducted globally with the whole of the intervention group, as is permissible according to the manual (Barrett, 2004). Where smaller group activities were specified in the FRIENDS Manual, participants were divided into smaller groups and instructed to complete those activities in their small group. Furthermore, all sessions were implemented as instructed by the manual. Apart from following the instructions according to the manual (Barrett), the following two issues, pertaining to the language of instruction and homework activities were addressed: Firstly, although the participants were mainly Afrikaans speaking, and were used to receiving their education in Afrikaans, they all receive English as a second language at school and, therefore, should be able to comprehend the English material. Yet, to cater for difficulty comprehending and reading the English material, the content was explained in Afrikaans. Thus an effort was made to ensure that participants understood the contents of each session. In this regard the older age group posed the benefit of better language skills than a younger age group. Secondly, to increase compliance with homework activities, the researcher changed homework activities into a competition between two teams – girls versus boys. Homework activities of every session for each team (girls versus boys) were counted and added up at the end of the intervention. The winning team received a small reward in the form of a packet of sweets and stickers. The losing team received a small consolation prize in the form of a small sweet to thank them for their contribution during the intervention. Sweets were considered to be an adequate reward after it was determined that none of the children had allergies to sweets or were diabetic.

Although parent sessions are recommended (Barrett, 2004), logistical difficulties in the present study prevented this from being realised. More specifically, two information sessions were organised with parents, but parents indicated that they were unable to attend owing to long working hours and difficulties with transportation. Therefore, it was decided not to include this as part of the pilot study. Also, unfortunately the limited time frame allocated to the study did not allow the recommended two booster sessions to be conducted.

Since sessions were conducted during school hours, overall attendance of the sessions was good: of the participants included in data-analysis, only 3 participants missed one session. At the beginning

of each new session, the previous session was thoroughly reviewed to refresh the participants' memory and to compensate for those children who did not attend the previous session.

To ensure that the researcher adhered to the manual instructions an independent observer, with honours level training in psychology and completed a CBT-module, was present during all sessions.

4.8.6　Testing procedures: Time 2

Once the FRIENDS programme had been completed with the intervention group, the anxiety status of all participants (intervention group and wait-list control group) was reassessed one week after completion of the intervention group's Session 10.

Each participant received a questionnaire with that particular child's numeric participant-code written on the questionnaire. Once again, questionnaires were completed separately for the two classes during *two consecutive* periods on the same day. As a result, children from the two classes did not have any contact with one another between the two testing periods.

As with the first testing, participants were instructed to fill in the questionnaires independently and truthfully. Anonymity and confidentiality was once more explained to the children. Questions were read aloud by the researcher, pausing between questions to allow children to contemplate and choose an answer. A 5-minute break, during which they could stretch out, was allowed between each of the three questionnaires. However, participants were instructed to close their booklet of questionnaires during the 5-minute break to ensure that participants would not influence one another. Following the completion of the questionnaires, they were scored by the researcher. The questionnaires were externally moderated and all discrepancies were corrected by the researcher.

The same independent observer who was present during the first testing procedures was present during this testing procedure.

4.8.7　Administrative procedures

After a period of 4 months the school was contacted again and arrangements were made for the intervention with the wait-list control group. This time lapse was due to childrens' end-of-year examinations and December holiday, and approval procedures from the Department of Education (see Addendum C).

4.8.8   Testing procedures: Time 3

Firstly, the anxiety status of all participants ($N = 46$) in both conditions was reassessed using the SCAS, RCMAS and SEQ-C.

In contrast with the testing procedures during the previous occasions, the two classes completed the questionnaires at the same time in two different classrooms. In the one classroom, the researcher administered the questionnaires in the presence of the independent observer who had been present during the first two testing procedures. In the other classroom, an assistant, who was thoroughly instructed by the researcher, administrated the questionnaires in the presence of a second independent observer. Both the assistant and the independent observer were registered Masters students in Psychology.

As with the other two testing procedures, each participant received a booklet of questionnaires that was only identifiable by the participant-code. In both the classrooms participants were instructed to answer the questionnaires truthfully and independently, once again asking them to cover their work to prevent participants influencing one another. Also, participants were reminded of the anonymity and confidentiality of their answers.

In both classrooms the questions were read aloud to ensure that participants would comprehend each question. Between each of the three questionnaires children were allowed a five-minute break, once their booklet of questionnaires were closed. The researcher scored all questionnaires. The questionnaires were externally moderated and all discrepancies were corrected by the researcher.

4.8.9   Intervention with wait-list control group

For the wait-list control group the intervention proceeded in a similar way than for the intervention group. In this regard is important to state that an effort was made to ensure that both the intervention group and wait-list control group was exposed to the same experimental conditions by, for example, ensuring that the intervention was implemented by the same person for both groups and that the same independent observer, that was present with the intervention group was also present with the wait-list control group.

Once again, a time for the sessions were arranged that would not impose on children's academics or afternoon sports programmes. The school allocated two hours per week to the study: one hour-long Arts-and-Culture period and one hour-long Life Skills period per week, as the school could not

accommodate the intervention during 12 weeks. Hence, two sessions per week, on two *alternate* days of the week, were conducted with the wait-list control ($n = 34$) group.

In common with the intervention group, the English programme material was explained in Afrikaans to participants to cater for any reading and comprehension difficulties there might have been with the English material.

The homework was again converted into a competition of boys versus girls. The winning team received a small reward in the form of a packet of sweets and stickers. The losing team received a small consolation prize in the form of a small sweet to thank them for their contribution during the intervention. Sweets were considered to be an adequate reward after it was determined that none of the children had allergies to sweets or were diabetic.

Once the third testing had been completed, the FRIENDS programme was conducted with the 34 participants of the wait-list control group. As with the intervention group, children in the wait-list-control group were not sub-divided into smaller groups and, therefore, sessions were conducted globally with the whole of the group. Where smaller group activities were specified in the FRIENDS Manual, participants were divided into smaller groups and instructed to complete those activities in their small group.

Since sessions were conducted during school hours, overall attendance of the sessions was good: of the participants included in data-analysis, 2 participants missed one session whilst 1 participant missed two sessions. At the beginning of each new session, the previous session was thoroughly reviewed to refresh the participants' memory and to compensate for those children who did not attend the previous session.

During all sessions an independent observer, with honours level training in psychology, was present to ensure the researcher adhered to the instructions in the manual.

4.8.10   Testing procedures: Time 4

Two days following the completion of Session 10, the anxiety status of participants ($N = 46$) was reassessed. This differed slightly with a few days' difference from the assessment at Time 2, where participants were assessed a week after the completion of the Session 10. However, since the children were writing exams during the following week, no other time was available to complete the testing.

As happened regarding previous testing procedures, each participant received a questionnaire that had the child's participant-code written on the questionnaire. Questionnaires were once more completed simultaneously by the two classes in two different classrooms. In accordance with the previous testing, the researcher administered the questionnaires in the presence of an independent observer in the one classroom. In the other classroom the questionnaires were administered by an assistant, who was thoroughly instructed by the researcher in the presence of a second independent observer. Both the assistant and independent observer were registered master's students in Psychology.

Questions were read aloud in both classrooms to ensure that participants would comprehend each question. Between questions a pause was made to allow participants to contemplate and choose and answer. Also, participants were allowed a five-minute break between each of the three questionnaires whilst their booklet of questionnaires was closed. Once the testing had been completed, the researcher scored all questionnaires. The questionnaires were externally moderated and all discrepancies were corrected by the researcher.

4.11   Data analysis

Data were analysed using the Statistical Package for Social Sciences (SPSS) (George & Mallery, 1999).

Apart from the main analysis, the reliability of the Afrikaans versions of the questionnaires with the current sample was explored, descriptive data-analysis was performed, and also the assumptions of parametric data were assessed.

Regarding the reliability of the questionnaires, the alpha values of the Afrikaans versions of the three questionnaires were established. Since the SCAS was considered to be a lengthy questionnaire, a split half reliability analysis was performed. For the RCMAS, and the SEQ-C an alpha analysis was performed.

In addition, descriptive data-analysis to determine the means and standard deviations of age, anxiety- and self-efficacy scores, was computed. The normality of the data was explored using the Kolmogorov-Smirnov test.

Regarding the main analysis, the between group effects was explored using a one-way analysis of variance to determine the differences between the intervention group and the wait-list control group

at each of the four times of assessment. Within group effects were established using a repeated measures analysis of variance to determine the change across time, separately for each group.

4.12   Chapter summary

In this chapter topics regarding the methodology that had been used, were discussed.

Firstly, the hypotheses explored by the study were addressed, namely four relating to the differences between the intervention and wait-list control group, and two relating to the differences within each group over time.

In addition, the type of research design and the rationale behind it was discussed. The present study is regarded as a programme evaluation that used a non-equivalent wait-list control group design that is a form of quasi-experimentation.

Ad hoc sampling was used because of situational constraints.

The participants in the study were described. A total of 46 12-year-old children participated in the study and were either enrolled into an intervention group ($n = 25$) or a wait-list control group ($n = 21$). The participants' social background were also discussed, and it was concluded that the participants came from a formerly disadvantaged, low-income community.
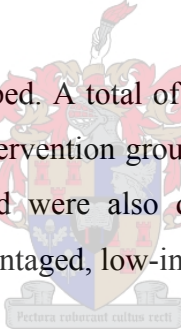
Next, the intervention programme was described. The "FRIENDS" programme is a cognitive-behaviour therapy-based programme intended as an early intervention and prevention programme. The programme is directed for use in children between the ages of 7- and 11 years. The programme uses child-friendly activities that teach children coping skills and problem-solving techniques for dealing with anxiety and depression.

Three self-report questionnaires, two measuring anxiety – the Spence Children's Anxiety Scale (SCAS) (Spence, 1997) and the Revised Children's Manifest Anxiety Scale (RCMAS) (Reynolds & Richmond, 1978), and one measuring self-efficacy: the Self-Efficacy Questionnaire for Children (SEQ-C) (Muris, 2002) – were used in the study. In this chapter, an overview of the three questionnaires was also provided. The psychometric properties of the scales were subsequently discussed.

Additionally, the procedures followed were discussed, including administrative-, testing-, and intervention procedures in the collection of the data.

Finally, the section on the analysis of the data reported on the statistical procedures followed during data-analysis.

The subsequent chapter will address the results obtained from the analysis of the data.
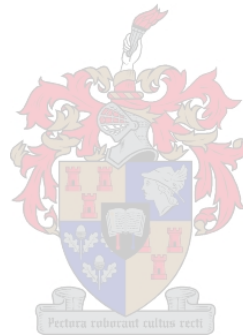
CHAPTER 5

RESULTS

5.1   Introduction

This chapter reports on the main findings of the present study. Firstly, the results of the alpha analysis of the questionnaires are reported. Then, descriptive data analysis provides a broad overview on the general trend of the data and addresses issues such as age, gender, and anxiety and self-efficacy data. Finally, the main analysis reports on the analysis of the data with regard to hypothesis testing.

5.2   Introduction to the analysis of the data

As previously mentioned, 66 (30 girls, 36 boys) 12-year-old children participated in the study, but 20 participants' data had to be excluded from data-analysis for the following reasons: attrition, incomplete questionnaire data, and incorrectly completed questionnaires. Attrition accounted for 4 participants in the intervention group and 4 participants in the wait-list control group leaving the study. Furthermore 4 participants in the intervention group and 7 participants in the wait-list control group were absent on one of the 4 times of testing, which resulted in incomplete questionnaire data. Finally, the questionnaires of 1 participant in the intervention group were completed incorrectly and could not be scored, and thus the data relating this participant could not be used.

The elimination of the incomplete data resulted in a statistical sample size of 46 participants (17 girls, 29 boys), of whom 25 participants were in the intervention group (12 girls, 13 boys), and of whom 21 participants were in the wait-list control group (5 girls, 16 boys). Thus, for subsequent analysis, only the data from the statistical sample ($N = 46$) were used.

It should again be emphasised for the sake of clarity that the following time line describes the various times of assessment when participants' anxiety symptoms and level of self-efficacy were measured:

Time 1:   • pre-intervention assessment for the intervention group (IG)

                       • pre-intervention assessment for the wait-list control group (WCG)

Time 2:   • post-intervention assessment for the intervention group (IG)

                       • pre-intervention assessment for the wait-list control group (WCG)

Time 3:   • 4-months post-intervention assessment for the intervention group (IG)

• pre-intervention assessment for the wait-list control group (WCG)

Time 4:   • 6-months post-intervention assessment for the intervention group (IG)

• post-intervention assessment for the wait-list control group (WCG)

5.3   Reliability analysis of questionnaires

To test the internal consistency of the questionnaires within this sample of children, alpha analyses were performed. The internal consistency was established using the statistical sample ($N = 46$) and the test scores at time 1. Usually, an alpha value of .70 or above is thought to reflect good internal consistency (Field, 2005).

5.3.1   SCAS

Since the SCAS has 38 items, it was considered to be a lengthy questionnaire. Therefore, a Guttman split-half analysis was performed. This yielded a Guttman split-half value of .80 for the questionnaire. Clearly, this value is above the suggested cut-off of .70 and thus attests to good internal consistency. It may consequently be concluded that within this sample of participants the SCAS yielded good internal consistency.

5.3.2   RCMAS

Since the 3 anxiety subscales of the RCMAS in total contain 28 items, a Cronbach's alpha was considered to be an appropriate analysis to evaluate the internal consistency of this questionnaire. The Cronbach's alpha yielded a value of .60. Evidently this value is below the suggested cut-off of .70 and, therefore, is indicative of poor internal consistency. Thus within this sample of children, the RCMAS yielded an unsatisfactory internal consistency. It stands to reason that the data obtained from this questionnaire should be interpreted cautiously.

5.3.3   SEQ-C

Because the SEQC has 24 items, a Cronbach's alpha was considered appropriate to determine the internal consistency of this self-efficacy questionnaire. The analysis yielded a value of .83. Compared to the suggested cut-off mark of .70, this value is above the cut-off mark and, therefore, indicates good internal consistency. Within this sample of children the SEQ-C yielded good internal consistency.

5.4   Descriptive data-analysis

During the descriptive part of the data analysis, the means and standard deviations for age, anxiety-, and self-efficacy scores were computed. In addition, the assumptions of the parametric data obtained from the SCAS, RCMAS, and SEQ-C at Time 1 to Time 4, were verified.

5.4.1   Age

The means and standard deviations for age of the statistical sample ($N = 46$), intervention group ($n = 25$) and wait-list control group ($n = 21$) are reported in Table 1.

Table 1

Means and Standard Deviations for Age Displayed Separately for Participants (N = 46),
Intervention Conditions, and Gender

Group	Mean age (months)	Mean age (years)	SD for age (months)	SD for age (years)
Participants				
Statistical sample (*N*=46)	151.65	12.63	9.14	0.76
Condition				
Intervention Group (*n*=25)	151.36	12.61	10.06	0.83
Wait-list Control Group (*n*=21)	152.00	12.67	8.14	0.68
Gender				
Boys (*n*=29)	153.34	12.78	10.08	0.84
Girls (*n*=17)	148.76	12.40	6.55	0.54

As could be seen from the data in Table 1, at the commencement of the study participants were on average 12 years and 6 months. Generally, children in grade 6 turn 12 during the course of that school year. Therefore, the average age of participants in the current study does not deviate from educational norms regarding age.

In addition, as Table 1 reflects, participants in the wait-list control group are about 1 month older than the participants in the intervention group. However, an independent samples t-test indicated that this difference was non-significant $t(44) = -.234, p = .816$. Thus the intervention- and wait-list control group did not differ significantly from one another with regard to age.

Also, according to Table 1, boys were on average about 5 months older than girls. An independent samples t-test revealed this difference to be non-significant: $t(44) = 1.673$, $p = .101$. Therefore, there was no recorded significant difference between the ages of boys and girls.

5.4.2   Gender

Of the 46 participants included in the statistical sample ($N = 46$), 17 were girls and 29 were boys. Clearly, the boys outnumbered the girls.

In the intervention group ($n = 25$) there were 12 girls and 13 boys, whilst in the wait-list control group ($n = 21$) there were 5 girls and 16 boys. Thus the two groups seemed to differ with regard to gender composition, in that the wait-list control group had fewer female participants than the intervention group. To determine whether this seemingly large difference in gender composition between the two groups was statistically significant, a chi-square test was performed. This revealed that the difference in gender composition between the intervention group and wait-list control group was non-significant: $p = .09$. Therefore, the intervention group and the wait-list control group did not differ statistically with regard to gender composition.

Also, anxiety data were analysed to determine whether there was a significant effect for gender regarding anxiety symptoms. A repeated measures ANOVA with the following three factors were determined for both the SCAS data and RCMAS data: Time x Condition x Gender. Results revealed that there was no significant effect for gender on the SCAS data: $F(3) = 0.49$, $p = .68$. Also, there was no significant effect for gender on the RCMAS data: $F(3) = 0.51$, $p = .67$. Hence gender was excluded as a possible confounding variable on anxiety data.

5.4.3   Anxiety scores on the SCAS

In addition to the means and standard deviations being computed, the assumptions of parametric data were also verified using the SCAS data obtained from the statistical sample ($N = 46$) for Time 1 (pre-intervention: IG and WCG) through Time 4 (6-months post-intervention: IG, post-intervention: WCG). Whereas the descriptive analyses explored the general trend of the data, verification of the assumptions of parametric data ascertained whether parametric or non-parametric data analysis should be performed. Table 2 contains the descriptive statistics for the intervention group ($n = 25$) and the wait-list control group ($n = 21$). Figure 1 graphically displays the means separately for the intervention group ($n = 25$) and the wait-list control group ($n = 21$), across time.

Table 2

Descriptive Statistics of Scores on the Spence Children's Anxiety Scale (SCAS)

| | Mean SCAS score | | SD of SCAS scores | | |
Testing	Intervention group (*n*=25)	Wait-list control group (*n*=21)	Intervention group (*n*=25)	Wait-list control group (*n*=21)	Skewness (*N*=46)
Time 1	42.12	40.14	15.82	12.42	-.24
Time2	37.48	38.05	16.26	12.72	-.17
Time 3	32.48	38.38	12.28	15.58	.35
Time 4	31.64	33.71	16.61	16.24	.28

From the means listed in Table 2, it is evident that participants in both the intervention group (*n* = 25) and the wait-list control group (*n* = 21) scored high on the SCAS at Time 1 (pre-intervention: IG and WCG). Compared to Time 1, scores for both groups were lower at Time 4 (6-months post-intervention: IG, post-intervention: WCG), thus indicating a decline in SCAS scores from Time 1 to Time 4. Also, the index of skewness show that at Time 1 and Time 2 scores were negatively skewed, indicating that most participants reported high scores on the SCAS, whereas at Time 3 (4-months post-intervention: IG, pre-intervention: WCG) and Time 4 scores were positively skewed, indicating that most participants reported lower scores on the SCAS after exposure to the intervention condition.

Also, when the cut-off value of 42.48 for clinical significance on the SCAS was considered, it became clear that 16 participants (10 intervention group, 6 wait-list control group) of the 46 participants in the study scored above the cut-off at Time 1. Yet, at Time 4 only 8 participants (5 intervention group, 3 wait-list control group) of the initial 16 participants who had scored above the cut-off value at Time 1, were still within the range of clinical significance.
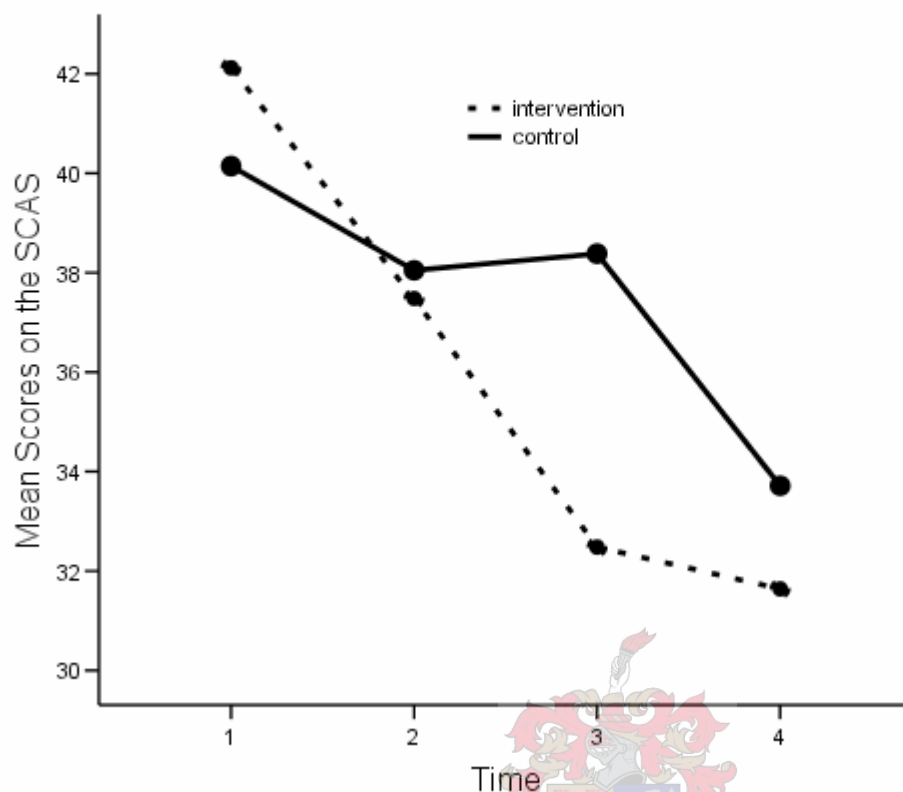
Figure 1. Distribution of scores on the Spence Children's Anxiety Scale (SCAS) for the intervention group and the wait-list control group across time.

In Figure 1, the general trend of the data on the SCAS is displayed. The means across time is displayed separately for the intervention group ($n = 25$) (displayed by the dotted line), and wait-list control group ($n = 21$) (displayed by the solid line). At Time 1 (pre-intervention: IG and WCG), both groups had high scores on the SCAS. Following the trend of the intervention group, it can be seen that at Time 2 (post-intervention: IG, pre-intervention: WCG) – following the intervention – there is a marked reduction in anxiety scores. This downward trend persists from Time 2 to Time 3 (4-months post-intervention: IG, pre-intervention: WCG), to Time 4 (6-months post-intervention: IG, post-intervention: WCG). In contrast with the intervention group, the SCAS scores of the wait-list control group seem to remain relatively constant from Time 1 to Time 3. However, there is a sharp reduction in scores from Time 3 – following the implementation of the intervention – to Time 4.

The assumption of normal distribution of residuals were checked using residual plots. For Time 1 (pre-intervention: IG and WCG) through Time 4 (6-months post-intervention: IG, post-intervention: WCG), no deviation from this assumption was detected on the SCAS data. Therefore, parametric data-analysis could be used in subsequent analyses.

5.4.4 Anxiety scores on the RCMAS

In common with the previous anxiety questionnaire, the means and standard deviations of the RCMAS data for statistical sample ($N = 46$) were determined for Time 1 (pre-intervention: IG and WCG) to Time 4 (6-months post-intervention: IG, post-intervention: WCG). In addition, the normality of the distribution of residuals was assessed to ascertain whether parametric data-analysis could be used. The results of the descriptive analysis for both the intervention group ($n = 25$) and the wait-list control group ($n = 21$) are reported in Table 3. In addition, the means across time for the intervention group ($n = 25$) and wait-list control group ($n = 21$) is displayed graphically in Figure 2.

Table 3

Descriptive Statistics of Scores on the Revised Children's Manifest Anxiety Scale (RCMAS)

| | Mean RCMAS score | | *SD* of RCMAS scores | | |
Testing	Intervention group (*n*=25)	Wait-list control group (*n*=21)	Intervention group (*n*=25)	Wait-list control group (*n*=21)	Skewness (*n*=46)
Time 1	14.04	13.14	4.02	4.29	-.19
Time 2	13.08	14.14	3.74	3.95	-.18
Time 3	13.36	11.90	4.33	4.42	-.31
Time 4	12.60	12.95	5.04	5.72	-.26

Considering the mean scores for each group, it is evident from Table 3 that participants in both the intervention group ($n = 25$) and wait-list control group ($n =21$) scored high at Time 1 (pre-intervention: IG and WCG) through Time 4 (6-months post-intervention: IG, post-intervention: WCG). Thus, even though scores for each group were variable between each time of testing, the overall mean score within each group virtually remained constant from Time 1 to Time 4. This indicated that little overall change occurred in RCMAS score across time. Additionally, taking the

index of skewness into consideration, RCMAS scores throughout remained negatively skewed, indicating that most participants reported high scores on the RCMAS at each of the times of testing.

When the suggested cut-off value for clinical significance on the RCMAS was considered, it became evident that none of the participants scored above the cut-off value at any of the four times of testing.
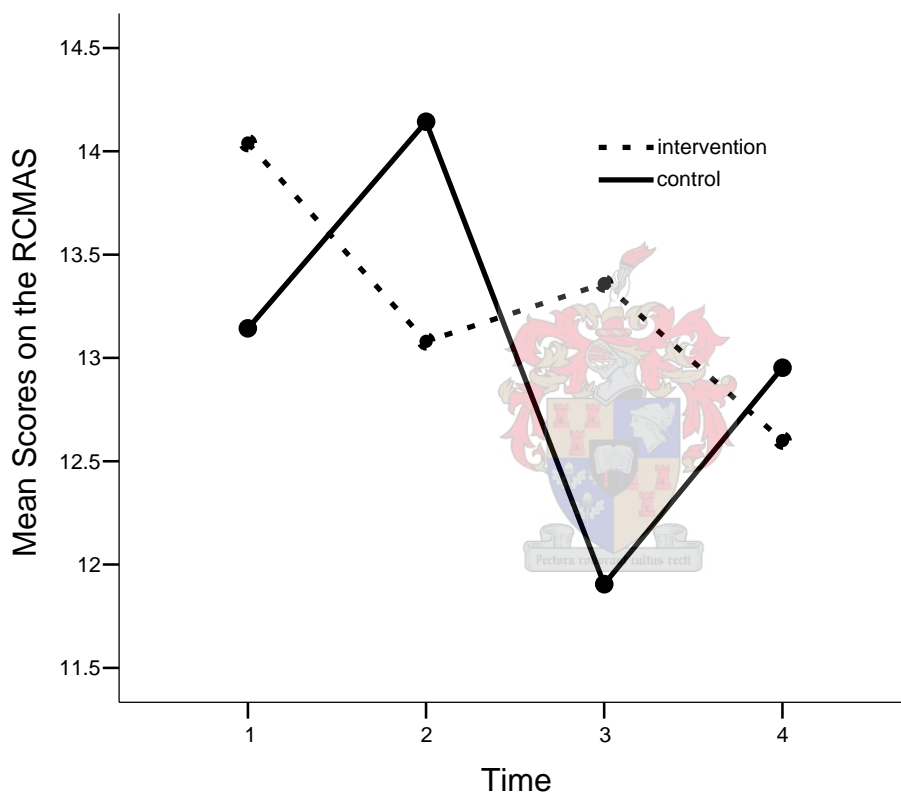
Figure 2. Distribution of scores on the Revised Children's Manifest Anxiety Scale (RCMAS) for the intervention group and the wait-list control group across time.

Following the general trend of the data on Figure 2, it is evident that the data on the RCMAS are relatively variable between each time of testing. More specifically, for the intervention group (*n* = 25) (displayed by the dotted line) scores lowered from Time 1 (pre-intervention: IG and WCG) to Time 2 (post-intervention: IG, pre-intervention: WCG), with an increase to Time 3 (4-months post-intervention: IG, pre-intervention: WCG), after which scores lowered again at Time 4 (6-months

post-intervention: IG, post-intervention: WCG). Yet, if the mean RCMAS scores for the intervention group across time are considered, it appears that scores were only slightly lower from Time 1 (pre-intervention: IG and WCG) to Time 4. For the wait-list control group ($n = 21$) (displayed by the solid line) scores increased from Time 1 to Time 2, with a lowering of scores to Time 3, after which scores increased again at Time 4. Once again, if the mean RCMAS scores for the wait-list control group across time are considered, it appears that scores were only slightly lower.

As with the data on the previous anxiety questionnaire, the assumption of the normal distribution of the RCMAS residuals was verified using residual plots. No deviation from this assumption was detected for the RCMAS data. Thus parametric statistics could be used for the main-analysis.

5.4.5 Self-efficacy scores on the SEQ-C

For the data obtained from the SEQ-C, the means and standard deviations of the intervention group ($n = 25$) and wait-list control group ($n = 21$) for Time 1 (pre-intervention: IG and WCG) through Time 4 (6-months post-intervention: IG, post-intervention: wait-list control group) were determined to assist in the determination of the general trend of the data. Additionally, the assumptions of parametric data were verified to determine whether parametric or non-parametric data analysis should be performed. The results of the descriptive analyses are reported in Table 4, whereas Figure 3 is a graphical display of the data, across time, for both groups.

Table 4

Descriptive Statistics of Scores on the Self-efficacy Questionnaire for Children (SEQ-C)

| Testing | Mean SEQ-C score | | *SD* of SEQ-C scores | | Skewness (n=46) |
	Intervention group (n=25)	Wait-list control group (n=21)	Intervention group (n=25)	Wait-list control group (n=21)	
Time 1	91.36	93.29	12.29	12.87	-.41
Time 2	83.80	87.19	16.97	15.67	-.14
Time 3	82.64	84.43	17.64	17.49	-.61
Time 4	85.00	81.38	17.69	18.81	-.26

From Table 4 it could be deduced participants in both the intervention group ($n = 25$) and wait-list control group ($n = 21$) reported high scores on the SEQ-C throughout Time 1 (pre-intervention: IG and WCG) to Time 4 (6-months post-intervention: IG, post-intervention: wait-list control group). Even though scores declined across time, SEQ-C scores were still high at Time 4. In addition, if the index of skewness is taken into consideration, it is clear that the SEQ-C data are negatively skewed at Time 1 and remain negatively skewed across time. In other words, most participants reported high scores on the SEQ-C from Time 1 through Time 4, even though scores lowered across time.
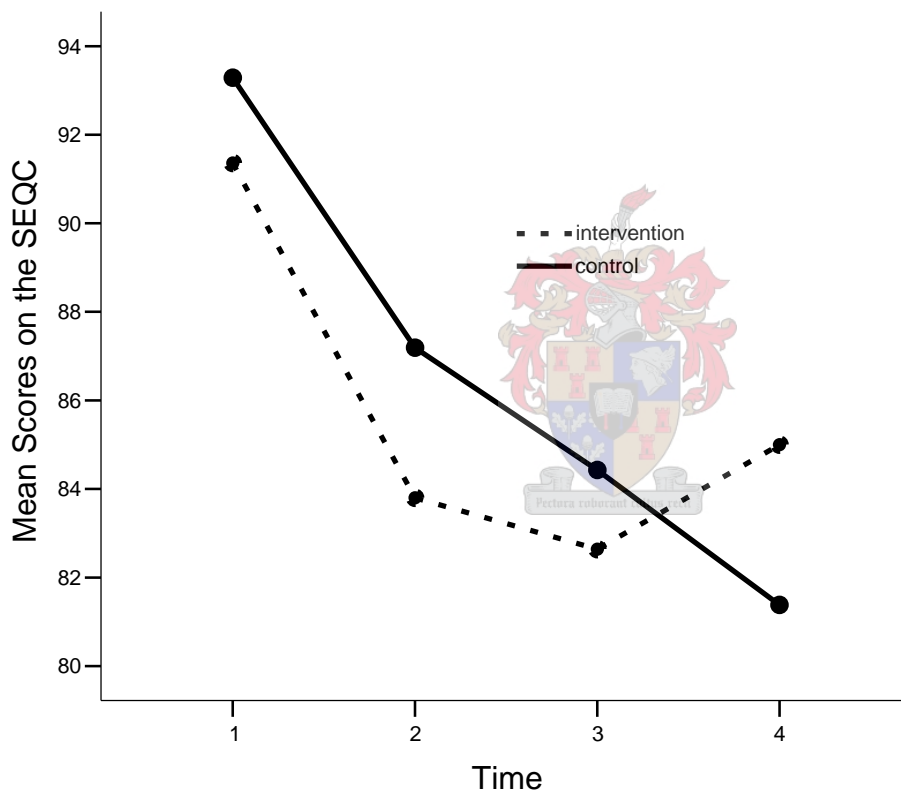
Figure 3. Distribution of scores on the Self-efficacy Questionnaire for Children (SEQ-C) for the intervention group and the wait-list control group across time.

Figure 3 is a graphical display of the data across time, displayed separately for the intervention group ($n = 25$) (portrayed by the dotted line) and wait-list control group ($n = 21$) (portrayed by the solid line). At Time 1 (pre-intervention: IG and WCG), both groups reported high scores on the SEQ-C. Following the trend of the intervention group's data, there is a sharp reduction in scores from Time 1 – following the intervention – to Time 2 and Time 3. However, scores increased

slightly from Time 3 (4-months post-intervention: IG, pre-intervention: WCG) to Time 4 (6-months post-intervention: IG, post-intervention: WCG). For the wait-list control group, scores on the SEQ-C display a downward trend from Time 1 through Time 4.

Once more, the assumption of normal distribution of residuals on the SEQ-C was verified using residual plots. No deviation from this assumption was detected for data on the SEQ-C. Therefore, parametric statistics could be used in the main analysis of the data.

5.5   Main analyses

In accordance with the two sets of hypotheses, the data were explored in two ways for the main data-analysis: the *between* group effects were explored using one-way analysis of variance, and secondly, the *within* group effects were explored using a repeated measures analysis of variance. Importantly, it should be emphasised that since a one-way ANOVA was performed at each of the four times of testing to explore the differences between the intervention group and the wait-list control group, a Bonferonni adjustment was made to control for the increased possibility of making a Type 1 error.

Before interpreting the results obtained from both the one-way ANOVA's and the repeated measures ANOVA's, Levene's Test was done to verify the assumption of equal error variance across groups. Levene's test should be non-significant in order to interpret the ANOVA. In addition, with the repeated measures ANOVA the assumption of sphericity was also verified before interpretation of the results.

5.5.1   Between group effects
5.5.1.1   Time 1

As Levene's test was non-significant for the SCAS: $p = .25$; the RCMAS: $p = .47$; and SEQ-C: $p = .83$, the ANOVA could be interpreted.

Results of the one-way ANOVA revealed that there was no significant difference between the intervention group ($n = 25$) and the wait-list control group ($n = 21$) at Time 1 (pre-intervention: IG and WCG) on either the SCAS: $F(1,44) = 0.22$, $p = 1.00$; or the RCMAS: $F(1,44) = 0.56$, $p = 1.00$; or the SEQ-C: $F(1,44) = 0.28$, $p = 1.00$.

Therefore, at the commencement of the study, there was no significant difference between the intervention group ($n = 25$) and wait-list control group ($n = 21$) regarding anxiety scores, as measured on the SCAS and RCMAS, and self-efficacy scores, as measured on the SEQ-C.

5.5.1.2   Time 2

Levene's test yielded a non-significant result for data on the SCAS: $p = .31$; the RCMAS: $p = .78$; and the SEQ-C: $p = .94$, thus the ANOVA was interpreted.

The one-way ANOVA at Time 2 (post-intervention: IG, pre-intervention: WCG) indicated that there was no significant difference between the intervention group ($n = 25$) and the wait-list control group ($n = 21$) regarding the data on the SCAS: $F(1,44) = 0.02$, $p = 1.00$, the data on the RCMAS: $F(1,44) = 0.92$, $p = 1.00$, and the data on the SEQ-C: $F(1,44) = 0.45$, $p = 1.00$.

Therefore, at Time 2 (post-intervention: IG, pre-intervention: WCG) no significant difference was detected between the intervention group ($n = 25$) and the wait-list control group ($n = 21$) on the two measures of anxiety or the measure of self-efficacy.

5.5.1.3   Time 3

As Levene's test was non-significant for the SCAS: $p = .32$; the RCMAS: $p = .78$; and SEQ-C: $p = .76$, the ANOVA was interpreted.

For Time 3 (4-months post-intervention: IG, pre-intervention: WCG), results of the one-way ANOVA revealed no significant difference between the intervention group ($n = 25$) and the wait-list- control group ($n = 21$) on the SCAS: $F(1,44) = 2.06$, $p = .63$; the RCMAS: $F(1,44) = 1.29$, $p = 1.00$; or the SEQ-C: $F(1,44) = 0.12$, $p = 1.00$.

Thus the intervention group ($n = 25$) and the wait-list control group ($n = 21$) did not differ significantly with regard to anxiety level or self-efficacy level at Time 3.
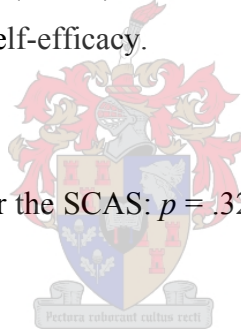
5.5.1.4   Time 4

Levene's test yielded a non-significant result for scores on the SCAS: $p = .93$; the RCMAS: $p = .53$; and the SEQ-C: $p = .57$, and therefore the ANOVA could be interpreted.

Results from the one-way ANOVA indicated that there was no difference between the intervention group (n = 25) and the wait-list control group (n = 21) with regard to the SCAS: $F(1,44)$ = 0.18, p = 1.00, RCMAS: $F(1,44)$ = 0.06, p = 1.00 or the SEQ-C: $F(1,44)$ = 0.47, p = 1.00.

Consequently there was no significant difference between the intervention group (n = 25) and the wait-list control group (n = 21) with regard to the two measures of anxiety or the measure of self-efficacy at Time 4.

5.5.2 Within group effects

5.5.2.1 Intervention group (n = 25) on the SCAS

The Repeated Measures ANOVA yielded a significant result for time: $F(3)$ = 11.46, p = .00. There was thus a significant change across time for the intervention group (n=25). Therefore, the change in intervention group's SCAS scores across time was significant.

The ANOVA was followed-up by a Bonferonni Post Hoc Test, which indicated a significant difference between Time 1 (pre-intervention: IG and WCG) to Time 3 (4-months post-intervention: IG, pre-intervention: WCG): p = .00, and from Time 1 to Time 4 (6-months post-intervention: IG, post-intervention: WCG): p = .00. This indicates that the decline in anxiety scores from Time 1 to Time 3, and from Time 1 to Time 4, was statistically significant. Yet, the decline in anxiety scores from Time 1 to Time 2 (post-intervention: IG, pre-intervention: WCG) was non-significant: p = .08. Consequently the decline in anxiety scores did not become marked, or statistically significant, until the third time of assessment.

5.5.2.2 Intervention group (n = 25) on the RCMAS

For the RCMAS data, results of the Repeated Measures ANOVA indicated a non-significant effect for time: $F(3)$ = 0.96, p = .42. Therefore, although the data on the RCMAS was variable across time, this variability was not statistically significant for the intervention group's (n = 25) data.

5.5.2.3 Intervention group (n = 25) on the SEQ-C

The Repeated Measures ANOVA yielded a significant effect for time: $F(3)$ = 2.97, p = .04. Thus, the decline in SEQ-C scores across time for the intervention group (n = 25) was significant.

A Bonferonni Post Hoc Test indicated that the decline in self-efficacy level between Time 1 (pre-intervention: IG and WCG) and Time 3 (4-months post-intervention: IG, pre-intervention: WCG) was significant: p = .04.

5.5.2.4   Wait-list control group (*n* = 21) on the SCAS

The Repeated Measures ANOVA yielded a non-significant effect for time: $F(3) = 1.52$, $p = .22$. Thus for the wait-list control group (*n* = 21) the decline in scores across time on the SCAS was non-significant.

5.5.2.5   Wait-list control group (*n* = 21) on the RCMAS

The result of the Repeated Measures ANOVA for the effect of time yielded a non-significant result: $F(3) = 1.67$, $p = .18$. Thus, even though the RCMAS data for the wait-list control group (*n* = 21) was variable across time, this variability was not statistically significant.

5.5.2.6   Wait-list control group (*n* = 21) on the SEQ-C

The Repeated Measures ANOVA was significant for time: $F(3) = 4.80$, $p = .00$. Therefore, the decline in SEQ-C scores for the wait-list control group (*n* = 21) across time was significant.

A Bonferonni Post Hoc Test indicated that the decline in self-efficacy levels between Time 1 pre-intervention: IG and WCG) and Time 4 (6-months post-intervention: IG, post-intervention: WCG) was significant: $p = .00$.

5.6   Chapter summary

In Chapter 5 the findings of the analysis of the data of the present study were reported. Firstly, the results were reported of the analysis of the internal consistency of the questionnaires used in the study. Next, results of the descriptive data analysis were accounted. Finally, the results of the main analyses were reported, which explored the hypotheses.

In the subsequent chapter, the implications of the findings of the present study will be discussed.

CHAPTER 6

DISCUSSION

6.1   Introduction

In this chapter the findings of the current study are discussed. Firstly, the implication of the findings on the reliability of the questionnaires used in the present study is considered. Secondly, the results of the descriptive analyses regarding age, gender, anxiety data, and self-efficacy data are discussed. Thirdly, the findings regarding the main analysis pertaining to between group effects and within group effects on anxiety and self-efficacy data are addressed. Finally, the chapter ends with a synthesis and conclusion of the findings of the present study.

6.2   Reliability analysis of questionnaires

As previously mentioned, the internal consistency of the Afrikaans versions of the questionnaires was established with the statistical sample ($N = 46$) using the test scores at Time 1. The suggested cut-off value of $\alpha \geq .70$ for internal consistency was applied throughout.

6.2.1   SCAS

For the present study, a *Guttman split-half reliability* analysis yielded a value of .80 for the SCAS, which attests to good internal consistency. Previous use of the SCAS in other studies consistently yielded a *Cronbach's alpha* value of .92 (Essau et al., 2002; Spence, 1998; Spence et al., 2003) including a sample of South African children (Muris, Schmidt, et al., 2002). In addition, previous studies report a *Guttman split-half reliability* value of .90 (Essau et al., 2002; Spence, 1998; Spence et al., 2003). Thus, in comparison with previous studies, together with a South African study, the SCAS as used in this study yielded a lower value ($\alpha = .80$) for internal consistency. A value of .80 indicates satisfactory internal consistency as it is above the suggested cut-off mark.

As the SCAS was found to have satisfactory internal consistency in the present study, the data obtained from the SCAS could be regarded as reliably reflecting the underlying construct within the sample ($N = 46$) in the present study.

6.2.2   RCMAS

In the present study, the RCMAS yielded a Cronbach's alpha of .60 within the sample of children in the current study. Generally, a value below .70 is regarded to reflect poor internal consistency (Field, 2005). Therefore, with the current sample of children, the internal consistency of the

RCMAS was not satisfactory. In contrast with the finding of the present study, previous use of the RCMAS demonstrated this anxiety questionnaire to have good internal consistency, with alpha values of .87 (Turgeon & Chartrand, 2003) and .89 (Muris, Merckelbach, et al., 2002) reported in literature.

For the present study, the internal consistency of the RCMAS was found to be unsatisfactory. According to these results, the data obtained from the RCMAS could not be completely relied on to reflect the underlying construct reliably within the current sample ($N = 46$). Therefore, in the present study caution was exercised in interpretating the data obtained from the RCMAS.

6.2.3   SEQ-C

For the present study, the SEQ-C yielded a Cronbach's alpha value of .83, which attests to good internal consistency. A previous study reports an alpha value of .90 for the total scale (Muris, 2002). Thus, although the SEQ-C yielded a lower alpha value ($\alpha = .83$) within the current sample, compared to previous research the internal consistency of the SEQ-C within the current sample is still satisfactory as it is above the suggested cut-of mark.

The SEQ-C was found to have good internal consistency with use in the present study. Thus the data obtained from the SEQ-C could be viewed as reliably reflecting the underlying construct within the present sample ($N = 46$).
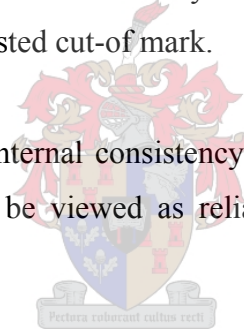
6.3   Descriptive data analysis

The implications of the results obtained from the descriptive analysis of the data on age, gender, anxiety, and self-efficacy are discussed with regard to the general trend of the data.

6.3.1   Age

According to literature, age differences play a role in children's reports of anxiety symptoms. More specifically, it appears that younger children report more anxiety symptoms than older children (Bell-Dolan et al., 1990; Essau et al., 2004; Muris, Schmidt, et al., 2002). In addition, the type of anxiety symptoms experienced differs among age groups (Kashani & Orvaschel, 1990). Therefore, in the present study, possible age differences were explored between the intervention- and wait-list control group, and boys and girls respectively.

Results of the present study indicated that at the commencement of the study, the Grade 6 participants were on average 12 years and 6 months of age. Thus the age of participants in the

present study did not deviate from educational norms regarding the typical age of children in Grade 6. Further, results revealed that there was no significant difference in age between the intervention group ($n = 25$) and the wait-list control group ($n = 21$) (p = .82), and no significant difference in age between boys ($n = 29$) and girls ($n = 17$) (p = .10).

It may consequently be concluded that participants in both groups (intervention- and wait-list control group) were equal with regard to age. Furthermore, there was no difference between boys and girls with regard to age. Against this background age is eliminated as a potential confounding variable in the variance of anxiety- and self-efficacy scores between the two groups.

6.3.2 Gender

Gender is another factor that influence children's reports of anxiety symptoms. In particular, studies indicate that girls tend to report more anxiety symptoms than boys (Bell-Dolan, et al., 1990; Essau et al., 2004; Kashani & Orvaschel, 1990; Muris et al., 1998). Similar results were also found in studies with South African children (Muris, Schmidt, et al., 2002; Perold, 2001). For this reason, possible gender differences were explored between the intervention- and wait-list control group in the present study.

Although it seemed in the present study that the intervention group (12 girls, 13 boys) and the wait-list control group (5 girls and 16 boys) differed with regard to gender composition between the groups, a chi-square analysis indicated that the intervention- and wait-list control group did not differ significantly with regard to gender composition ($p = .09$). Hence it may be concluded that, in spite of ostensible differences in gender composition, the intervention group and wait-list control group were, in fact, equal with regard to gender composition. Furthermore, results of a repeated mesures ANOVA indicated that there was no effect for gender on either SCAS ($F(3) = 0.49$, $p = .68$) or RCMAS ($F(3) = 0.51$, $p = .67$) data. On these grounds, gender is eliminated as a possible confounding factor in the variance of anxiety and self-efficacy scores between the intervention- and wait-list control groups.

6.3.3 Anxiety scores on the SCAS

Consistent with what literature suggests about the high prevalence of anxiety symptoms in South African children (Muris, Schmidt, et al., 2002; Perold, 2001), especially black and coloured children (Muris, Schmidt, et al., 2002; Muris, et al., 2006) and children from low a socio-economic-status (Muris, Schmidt, et al., 2002; Perold, 2001), participants ($N = 46$) in the current study reported high levels of anxiety symptoms. This is evident from the mean SCAS scores for the

intervention group ($n = 25$, $M = 42.12$) and the wait-list control group ($n = 21$, $M = 40.14$) at Time 1 (pre-intervention: IG and WCG) (see Table 2). Similar Australian based studies, inter alia the study by Barrett and Turner (2001) reported scores ranging between 26.76 and 27.44 pre-intervention among the three conditions in their study, and in the study by Barrett, Moore et al. (2000) scores ranged between 30.64 and 39.89 pre-intervention between the two conditions of their study. In the present study the pre-intervention SCAS scores of participants, were much higher. In other words, participants in the present study reported more anxiety symptoms pre-intervention compared to participants in similar studies.

Also, the mean SCAS scores at Time 1 (pre-intervention: IG and WCG) for the intervention group ($n = 25$, $M = 42.12$) and the wait-list control group ($n = 21$, $M = 40.14$) are close to the cut-off mark of 42.48 for clinical significance suggested by Spence (1997). More specifically, in the current study 16 participants (10 intervention group, 6 wait-list control group) scored above the suggested cut-off mark at Time 1. However, in the present study, at Time 4 the mean SCAS score for the intervention group ($n = 25$, $M = 31.64$) and wait-list control group ($n = 21$, $M = 33.71$) is further below the cut-off mark for clinical significance. In more detail, only 8 participants (5 intervention group, 3 wait-list control group) of the initial 16 participants, who had scored above the cut-off value, were still within the range of clinical significance. Thus, although this was not statistically determined owing to the small sample size, it seems that exposure to the intervention lowered the scores of participants who where within clinical range. This is in keeping with Barrett and Turner (2001) who found that the scores of participants in the intervention conditions were more likely to shift to the normal range compared to the scores of participants in the control condition.

From an ethical standpoint, all participants were sent a letter of reference offering further psychological assistance (Addendum A).

Furthermore, the data obtained from the statistical sample ($N = 46$) on the SCAS (see Table 2) demonstrated the following trend: Participants in both the intervention group ($n = 25$, $M = 42.12$) and the wait-list control group ($n = 21$, $M = 40.14$) reported high levels of anxiety at Time 1 (pre-intervention: IG and WCG), yet subsequently scores lowered through to Time 4 (6-months post-intervention: IG, post-intervention: WCG) for both the intervention group ($n = 25$, $M = 31.64$) and the wait-list control group ($n = 21$, $M = 33.71$). More specifically, the self-reported anxiety symptoms of the intervention group ($n = 25$) lowered from Time 1, following the intervention, through to Time 2, Time 3, and Time 4. Compared to this, the self-reported anxiety symptoms of the wait-list control group ($n = 21$) remained relatively constant from Time 1 to Time 3, and only

lowered following Time 3 (4-months post-intervention: IG, pre-intervention: WCG), subsequent to the intervention. Thus, for each group, fewer anxiety symptoms were reported on the SCAS following exposure to the intervention. Taken together, it would appear that participant's scores lowered in response to receiving the intervention. Results of subsequent analyses that explored whether this trend could be attributed to the intervention, is discussed in an ensuing section.

6.3.4   Anxiety scores on the RCMAS

According to the RCMAS data in the present study (see Table 3), participants in both the intervention group ($n = 25$, $M = 14.04$) and the wait-list control group ($n = 21$, $M = 13.14$) reported moderate anxiety symptoms at Time 1 (pre-intervention: IG and WCG). This finding is in contrast to what literature suggests about the high prevalence of anxiety symptoms in general among South African children (Muris, Schmidt, et al., 2002; Perold, 2001). Also, the finding that participants in the present study reported only moderate anxiety symptoms on the RCMAS is in contrast with the previous finding of the current study on the SCAS data at Time 1. In addition, according to the RCMAS results of the present study, none of the participants met the cut-off mark for possible anxiety problems as suggested by Reynolds and Paget (1983). However, the moderate anxiety symptoms reported on the RCMAS at Time 1 is in keeping with previous Australian-based studies where RCMAS scores at pre-intervention ranged among: 13.21 and 9.27, respectively, for the intervention condition and wait-list control condition (Shortt, Barrett, & Fox, 2001), and between 10.40 and 11.36 among the conditions the study by Barrett and Turner (2001). Yet it should be borne in mind that with participants in the present study, the RCMAS yielded poor internal consistency ($\alpha = .60$). Therefore, it is possible that data obtained from the RCMAS may not be completely reliable.

In addition, from the general trend of the RCMAS data ($N = 46$) it was evident that the data were variable between each time of testing. Yet, when the overall change in RCMAS score is considered by comparing scores at Time 1 (pre-intervention: IG and WCG) for the intervention group (n = 25, $M = 14.04$) and wait-list control group ($n = 21$, $M = 13.14$) with the scores at Time 4 (6-months post-intervention: IG, post-intervention: WCG) for the intervention group ($M = 12.60$) and wait-list control group ($M = 12.95$), it is apparent that scores virtually remained the same across time (see Table 3). Further, when the fluctuation of scores between each time of testing is considered, it would seem that scores varied independently of exposure to the intervention condition. Therefore, it is possible that the variability of scores on the RCMAS could be attributed to the poor reliability of the scale ($\alpha = .60$) rather than exposure to the intervention condition. The findings of subsequent

analyses that explored whether the fluctuation of scores could be attributed to the intervention, are discussed in a later section.

6.3.5   Self-efficacy scores on the SEQ-C

Self-efficacy, as a mediator of affective states (Bandura, 1997), is thought to have a unique association with anxiety (Bandura; Bandura, et al., 1985; Prins, 2001). Recently, low self-efficacy has been found to relate to high levels of anxiety symptoms in a sample of adolescents (Muris, 2002). In contrast to what would theoretically be expected when considering literature, in the present study participants ($N = 46$) in both the intervention group ($n = 25$, $M = 91.36$) and wait-list control group ($n = 21$, $M = 93.29$) reported high levels of self-efficacy at Time 1 (pre-intervention: IG and WCG), even though they reported high levels of anxiety symptoms on the SCAS. Also, compared to participants in the Muris (2002) study where participants' mean score ($M = 69.9$) was around the mean for the questionnaire, the scores of both groups in the present study at Time 1 are much higher than the mean for the questionnaire, as are evident from the negatively skewed data in the present study.

Thus from the previous finding it would appear that participants were "faking good". A possible explanation for the high levels of self-efficacy reported by participants in the present study may be attributed to specific contextual perceptions of certain translations of the questionnaire. For example, it appeared from participants' reactions that they were sensitive to the word "*slaag*" in the sentence: "*Hoe goed slaag jy daarin*". Given the context, and the fact that the research procedures were conducted within a school setting, it is possible that the use of the word "*slaag*", meaning also "to pass", could have contributed to participants "faking good".

Further, the data obtained from the statistical sample ($N = 46$) on the SEQ-C in the present study demonstrated the following trend: Both the intervention group ($n = 25$, $M = 91.36$) and the wait-list control group ($n = 21$, $M = 93.29$) reported very high levels of self-efficacy at Time 1 (pre-intervention: IG and WCG). For the intervention group, scores declined from Time 1 to Time 3 (4-months post-intervention: IG, pre-intervention: WCG), with a slight increase at Time 4 (6-months post-intervention: IG, post-intervention: WCG). For the wait-list control group, scores declined from Time 1 through to Time 4 (6-months post-intervention: IG, post-intervention: WCG). Therefore, as the self-efficacy scores for *both* the intervention group and wait-list control group declined from Time 1 onward, it would appear that the decline in self-reported self-efficacy was independent of exposure to the intervention condition. Consequently it seems that self-efficacy scores did not change in response to the intervention. Considering the high levels of self-efficacy

reported at Time 1 by both the intervention group (n = 25, M = 91.36) and the wait-list control group (n = 21, M = 93.29), which is much higher than the mean for the questionnaire, and the fact that scores were negatively skewed, the decline in self-efficacy scores across time might be attributed to regression to the mean, rather than exposure to the intervention condition. In a following section results are discussed of subsequent analyses that explored whether this trend could be attributed to the intervention or not.

6.4 Main analyses

During data analysis in Chapter 5, data were explored in two ways: *between* group effects were explored using one-way analysis of variance, and secondly, the *within* group effects were explored using a repeated measures analysis of variance. The implication of the findings is subsequently discussed.

6.4.1 Between group effects

6.4.1.1 Time 1

According to the results, there was no significant difference between the intervention group (n = 25) and the wait-list control group (n = 21) with regard to anxiety (see Table 2 and Table 3) and self-efficacy (see Table 4) scores at Time 1 (pre-intervention: IG and WCG). Therefore, at the onset of the study there were no statistical differences between the two groups regarding the two constructs: anxiety and self-efficacy.
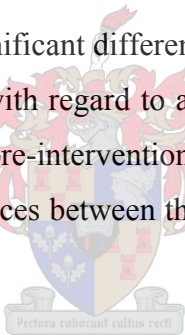
6.4.1.1.1 Anxiety

Although the intervention group (n = 25, M = 41.22) scored slightly higher than the wait-list control group (n = 21, M = 40.14) on the SCAS (see Table 2), in conjunction to the intervention group (n = 25, M = 13.63) scoring slightly higher than the wait-list control group (n = 21, M = 13.14) on the RCMAS (see Table 3), these differences were shown to be non-significant. Since literature indicates that girls report more anxiety symptoms than boys (Bell-Dolan, et al., 1990; Essau et al., 2004; Kashani & Orvaschel, 1990; Muris et al., 1998), it is possible that the difference in gender composition between the two groups in the present study contributed to the difference in reported anxiety symptoms given that there were fewer female participants (n wait-list control group = 5; n intervention group = 12) in the wait-list control group than in the intervention group. However, the difference in gender composition between the intervention group and the wait-list control group was shown to be non-significant, thus indicating that differences between the intervention group (n = 25) and wait-list control group (n = 21) regarding SCAS- and RCMAS scores could not be ascribed to the possible confounding effect of gender. Also, since the differences between the intervention

group and wait-list control group regarding SCAS- and RCMAS scores were not statistically significant, participants in the intervention- and wait-list control group did not differ significantly from one another with regard to the construct of anxiety at Time 1 (pre-intervention: IG and WCG).

6.4.1.1.2 Self-efficacy

Regarding self-efficacy, at Time 1 (pre-intervention: IG and WCG), the intervention group (M = 91.36) reported a slightly lower level of self-efficacy than the wait-list control group (M = 93.29), with the difference being demonstrated as non-significant (see Table 4). Therefore, participants in the intervention- and wait-list control group did not differ significantly on the construct of self-efficacy. In addition, consider that participants in both groups reported very high levels of self-efficacy at Time 1. In this regard, Muris (2002) found low levels of self-efficacy associated with high levels of anxiety in a sample of adolescents. Drawing from this finding, theoretically it would be expected that the participants in the present sample should have reported low levels of self-efficacy considering the high level of self-reported anxiety on the SCAS. Thus, in contrast with the finding by Muris, participants in the present study did not report low levels of self-efficacy in conjunction with high levels of anxiety. Yet, it should be borne in mind that it appeared as if participants in the present study were "faking good" when completing the SEQ-C.

Hence, in accordance with the first hypothesis, at Time 1 (pre-intervention: IG and WCG) there was no difference between the intervention group and the wait-list control group on the constructs of anxiety and self-efficacy. Hence at the onset of the intervention participants in the two groups did not differ from each other with regard to anxiety and self-efficacy.

6.4.1.2 Time 2

Results revealed that there was no significant difference between the intervention group (n = 25) and the wait-list control group (n = 21) with regard to anxiety (see Table 2 and Table 3) and self-efficacy (see Table 4) at Time 2 (post-intervention: IG, pre-intervention: WCG).

6.4.1.2.1 Anxiety

On both measures of anxiety, no significant difference was found between the intervention group (n = 25) and the wait-list control group (n = 21). Although non-significant, on the SCAS the intervention group (M = 37.74) scored slightly lower than the wait-list control group (M = 38.05). However, it was expected that there would be a significant difference between the two groups. More specifically, it was expected that the intervention group would score significantly lower than the wait-list control group since the intervention group had received the intervention between

Time 1 (pre-intervention: IG and WCG) and Time 2 (post-intervention: IG, pre-intervention: WCG). On the RCMAS the intervention group ($M = 13.57$) scored slightly lower than the wait-list control group ($M = 14.14$), yet this difference was non-significant. Also, since the intervention group had received the intervention between Time 1 and Time 2, a statistically significant difference was expected on the RCMAS. The finding of the present study with regard to no significant differences between the intervention group and wait-list control group at post-intervention on measures of anxiety, are in contrast with previous studies where statistically significant differences were found at post-test between participants exposed to the intervention condition and participants in the control condition as measured on the RCMAS (Barrett & Turner, 2001; Lowry-Webster, et al., 2001; Shortt, et al., 2001).

6.4.1.2.2   Self-efficacy

Regarding self-efficacy, the intervention group ($M = 83.80$) reported a lower level of self-efficacy than the wait-list control group ($M = 87.19$), though this was found to be non-significant. This finding is in contrast with what was anticipated, since it was expected that the intervention group would report significantly *higher* levels of self-efficacy compared to the wait-list control group, as the intervention group have received the intervention. Therefore, contrary to what was expected, it would appear that the intervention did not significantly increase the self-efficacy of the intervention group at Time 2 (post-intervention: IG, pre-intervention: WCG). This finding is in contrast with Muris's (2002) speculation that anxiety interventions increase children's self-efficacy for dealing with threats whereby reducing their anxiety.

Hence, in contrast with hypothesis 2, the self-reported anxiety of the intervention group was not significantly lower than the wait-list control group. Also, the self-reported self-efficacy of the intervention group was not significantly higher compared to the wait-list control group. Therefore, at Time 2 (post-intervention: IG, pre-intervention: WCG), it appears that the FRIENDS programme did not have a statistically significant effect on either the self-reported anxiety or self-efficacy of the intervention group.

6.4.1.3   Time 3

According to the results there was no significant difference between the intervention group ($n = 25$) and the wait-list control group ($n = 21$) with regard to anxiety (see Table 2 and Table 3) and self-efficacy (see Table 4) at Time 3 (4-months post-intervention: IG, pre-intervention: WCG) (see Table 2).

6.4.1.3.1 Anxiety

With regard to anxiety, the intervention group (n = 25, M = 35.17) reported fewer anxiety symptoms on the SCAS than the wait-list control group (n = 21, M = 38.38). Although the difference in the two means at Time 3 (4-months post-intervention: IG, pre-intervention: WCG) seemed to be large and therefore significant, results indicated the opposite. Therefore, this finding is in contrast to what was expected. In this regard the small sample size (N = 46) may well have contributed to this difference being found non-significant. In other words, within a small sample statistical power is reduced and thus there is a greater possibility of making a type two error (failure to reject the null hypothesis) (Graziano & Raulin, 2004). Therefore, it is possible that reduced statistical power contributed to the difference in SCAS means not reaching statistical significance.

In addition, Dadds et al. (1997) report that even though the difference between the intervention condition and control condition in their study was non-significant at post-intervention, the intervention condition continued to improve upon which at 6-months follow-up assessment treatment effects were statistically significant. Thus it seems that even though statistically significant differences are not always apparent at post-intervention, differences may become evident with ensuing time. Therefore, it is possible that true differences between the intervention group (n = 25) and wait-list control group (n = 21) in the present study would only have emerged with passing time.

In essence, testing at Time 3 (4-months post-intervention: IG, pre-intervention: WCG) in the present study can be seen as a 4-month follow-up on the anxiety status of the intervention group. Compared with other follow-up studies, treatment outcomes were consistently found to be maintained (Barrett, Duffy, et al., 2001; Dadds, et al., 1997, 1999; Lowry-Webster, et al., 2003; Shortt, Barrett, & Fox, 2001). However, the present study found that even though the difference in reported anxiety symptoms on the SCAS between the intervention group and the wait-list control group at Time 3, which could be regarded as a 4-month follow-up, was seemingly large, in fact the difference was found to be non-significant. Yet, if the general trend of the data is considered, the anxiety symptoms of the intervention group improved up to Time 3 (4-months post-intervention: IG, pre-intervention: WCG) whereas the anxiety symptoms of the wait-list control group remained constantly high up to Time 3. Consequently it would seem that for data on the SCAS, the effect of the intervention was maintained 4-months post-intervention for the intervention group in the present study.

Even though the intervention group (*M* = 12.70) reported more anxiety symptoms than the wait-list control group (*M* = 11.90) on the RCMAS, this difference is relatively small and was found to be non-significant. It was expected that there would be a significant difference between the intervention group and the wait-list control group at Time 3 (4-months post-intervention: IG, pre-intervention: WCG). It should not be forgotten that the RCMAS yielded low internal consistency (α = .60) and, therefore, the reliability of the data obtained from the RCMAS is subject to question. Compared to other follow-up studies that also used the RCMAS in addition to other measuring instruments, treatment outcomes were found to be maintained (Barrett, Duffy, et al., 2001; Dadds, et al., 1997, 1999; Shortt, Barrett, & Fox, 2001). In the present study data on the RCMAS reflected a different picture: it seems that no improvement occurred for the intervention group up to Time 3 (4-months post-intervention: IG, pre-intervention: WCG). However, the possible influence of the poor internal consistency on the reliability of the RCMAS data should not be ignored.

6.4.1.3.2   Self-efficacy

Regarding self-efficacy, the intervention group (*M* = 82.64) reported a slightly lower level of self-efficacy compared to the wait-list control group (*M* = 84.43). As is evident from results, this difference was found non-significant. This finding is in contrast to what was expected, since it was anticipated that the intervention group would report significantly higher levels of self-efficacy compared to the wait-list control group. Therefore, it would appear that the intervention did not exercise a significant effect on the participants' level of self-efficacy. This finding of the present study is in contrast with the hypothesis by Muris's (2002) that anxiety interventions increase children's self-efficacy for dealing with threats, thereby reducing their anxiety. It would seem that the intervention used in the current study did not have an effect on participants' reported self-efficacy.

Hence, contrary to the third hypothesis, the intervention group did not report significantly fewer anxiety symptoms compared to the wait-list control group. Also, with regard to self-efficacy, contrary to the third hypothesis the intervention group did not report significantly higher levels of self-efficacy than the wait-list control group. Therefore, it appears that at Time 3 (4-months post-intervention: IG, pre-intervention: WCG) the FRIENDS programme did not have a statistically significant effect on self-reported anxiety or self-efficacy amongst participants in the intervention group.

6.4.1.4 Time 4

Results indicated that there was no significant difference between the intervention group ($n = 25$) and the wait-list control group ($n = 21$) with regard to anxiety (see Table 2 and Table 3) and self-efficacy (see Table 4) at Time 4 (6-months post-intervention: IG, post-intervention: WCG) (see Table 2).

6.4.1.4.1 Anxiety

Regarding anxiety, the intervention group scored lower on both measures of anxiety compared to the wait-list control group. The difference between the means of the intervention group ($n = 25$, $M = 32.59$) and the wait-list control group ($n = 21$, $M = 33.71$) on the SCAS was found to be non-significant for time. This finding is in accordance to what was expected at Time 4 (6-months post-intervention: IG, post-intervention: WCG), since the wait-list control group had received their intervention. Theoretically, the wait-list control group should be no different from the intervention group on the construct of anxiety after receiving the intervention. In conjunction, the difference in means between the intervention group ($M = 12.76$) and the wait-list control group ($M = 12.95$) on the RCMAS was also found to be non-significant. This finding was also in agreement with what was anticipated, since the wait-list control group was exposed to the intervention condition. Once again from a theoretical perspective, it was to be expected that the wait-list control group should be no different from the intervention group once they had received the intervention. However, the abovementioned two findings should be put into perspective: Even though, as predicted, no difference was found between the intervention group and the wait-list control group with regard to anxiety, this should be considered in context with the previous findings of the present study. At all of the other three times, no significant difference was found between the intervention group and the wait-list control group. Therefore, the finding at Time 4 (6-months post-intervention: IG, post-intervention: WCG) does not imply that the non-significant difference between the two groups could be attributed to the intervention. Synthesis of all the data is necessary before such conclusions may be drawn.

6.4.1.4.2 Self-efficacy

With regard to self-efficacy, the intervention group ($M = 85.00$) reported higher levels of self-efficacy than the wait-list control group ($M = 81.38$). Yet, this difference was non-significant. This finding is in accordance with what was expected since the wait-list control group had received their intervention. And theoretically the wait-list control group should be no different from the intervention group with regard to self-efficacy. However this finding, as with the finding on anxiety, should be considered in conjunction with the previous findings of the current study. At all

three previous times of testing there was no significant difference in self-efficacy between the intervention group and the wait-list control group. In fact, as mentioned earlier, it would appear from the descriptive data analysis that the decline in self-efficacy scores occurred independent of exposure to the intervention condition. Thus the findings at Time 4 (6-months post-intervention: IG, post-intervention: WCG) regarding self-efficacy do not imply that the non-significant difference between the two groups could be attributed to the intervention. In common with the findings on anxiety, synthesis of all the data in the present study is necessary before such conclusions could be drawn.

In accordance with hypothesis 4 there was consequently no significant difference between the intervention group and the wait-list control group on the constructs of anxiety and self-efficacy. The implication of these results, in context with all other findings of the present study, is discussed in a later section.

6.4.2 Within group effects

6.4.2.1 Intervention group on the SCAS

According to the results of the present study (see Table 2), for the intervention group ($n = 25$) there was a significant decline in self-reported anxiety symptoms across time, as measured on the SCAS: $F(2.61) = 10.84$, $p = .00$. More specifically, even though self-reported anxiety symptoms started to decline at Time 2 (post-intervention: IG, pre-intervention: WCG) (following the intervention) the decline in anxiety symptoms only became marked from Time 3 (4-months post-intervention: IG, pre-intervention: WCG) onward. In other words, the difference in anxiety symptoms was significant between Time 1 and Time 3 (p = .00), and Time 1 and Time 4 (p = .00). Therefore, it seems that the effect of the intervention only became statistically significant following a period of time. In accordance with the present finding that participants in the intervention group continued to improve across time, follow-up studies (Lowry-Webster, et al., 2003; Shortt, Barrett, & Fox, 2001) on the effect of treatment across time indicate that the intervention condition continue to improve across time. Taken together, it appears that the decline anxiety symptoms in the present study, as reported on the SCAS, may be attributed to the intervention.

Hence, in accordance with the first within group effects hypothesis, there was a significant decline in self-reported anxiety for the intervention group, as measured on the SCAS, across time. More specifically, this decline became statistically significant from Time 3 (4-months post-intervention: IG, pre-intervention: WCG) onward. Therefore, it would appear that the decline in self-reported

anxiety could be attributed to the FRIENDS programme, even though the decline only became statistically significant with passing time.

6.4.2.2   Intervention group on the RCMAS

Although anxiety symptoms reported on the RCMAS were variable across time, results (see Table 2) indicated that the decline in anxiety symptoms across time for the intervention group ($n = 25$) was non-significant: $F(3) = 1.04$, $p = .38$. This finding is contrary to what was expected. This finding is also in contrast with the finding of the present study on the data obtained from the SCAS. However, in this regard it should be kept in mind that the RCMAS demonstrated poor internal consistency ($\alpha = .60$) within the current sample of participants. Therefore, the reliability of the data obtained form the RCMAS is subject to question. The finding of the present study regarding anxiety symptoms on the RCMAS is in contrast with follow-up studies that followed participants during a course of time and found post-intervention effects to be sustained across time for participants in the intervention condition (Lowry-Webster, et al., 2003; Shortt, Barrett, & Fox, 2001).

Hence, contrary to the first hypothesis on the within group effects, no significant decline in anxiety symptoms was found on the RCMAS data for participants in the intervention group ($n = 25$). However, the possible effect of the poor internal consistency the RCMAS yielded within the current sample should be borne in mind.

6.4.2.3   Intervention group on the SEQ-C

Contrary to what had been hypothesised, results (see Table 2) indicated a decline in self-reported self-efficacy across time for the intervention group ($n = 25$). This decline in self-efficacy was found significant ($F(3) = 2.97$, $p = .04$), more specifically the decline in self-efficacy levels was significant between Time 1 (pre-intervention: IG and WCG) and Time 3 (4-months post-intervention: IG, pre-intervention: WCG): p = .04. According to descriptive data-analysis, participants reported very high levels of self-efficacy at Time 1 (pre-intervention: IG and WCG), as is evident from the negatively skewed data. When this finding is taken into consideration, it would thus appear that the decline in self-efficacy could be attributed to regression to the mean, rather than the influence of the intervention even though the decline in self-efficacy levels was significant Muris (2002) found self-efficacy and anxiety to be negatively correlated; that is: a low level of self-efficacy was related to a high level of anxiety. Drawing from this finding, when the high levels of self-reported anxiety symptoms on the SCAS are considered, it would be expected that participants in the intervention group should have reported low levels of self-efficacy at Time 1. And, as self-reported anxiety symptoms on the SCAS improved from Time 2 (post-intervention: IG, pre-

intervention: WCG) onward, it would be expected that self-efficacy would have improved. However, the present study found no evidence of this. Therefore, the present study could not find support for the hypothesis that the current anxiety intervention would improve participants' self-efficacy.

Hence, in contrast with the first hypothesis on the within group effects, no significant increase in self-efficacy level was found for the intervention group ($n = 25$) across time. Instead, a significant decline in reported self-efficacy was found, which seems to be attributable to regression to the mean.

6.4.2.4   Wait-list control group on the SCAS

Results of the present study indicated a non-significant decline in SCAS scores for the wait-list control group ($n = 21$) across time: $F(1.87) = 1.36$, $p = .27$. This finding is in contrast with what was expected. However, if one bears in mind the general trend of the data, it indicates that scores remained relatively constant between Time 1 (pre-intervention: IG and WCG) and Time 3. Yet, between Time 3 (4-months post-intervention: IG, pre-intervention: WCG) and Time 4, following the intervention, there was a sharp decline in anxiety scores, yet this was not statistically significant. Comparing the non-significant difference between Time 3 and Time 4 for the wait-list control group in the present study with a once-off pretest-post-test design in the study by Barrett and Turner (2001), the finding of the present study is in contrast with Barrett and Turner who found a significant decline in anxiety symptoms from pretest to post-test for participants in the intervention condition. Yet the finding that there was no significant decline from Time 3 to Time 4 (6-months post-intervention: IG, post-intervention: WCG) within the wait-list control group is in accordance with the previous finding in the present study for the intervention group between Time 1 (pre-intervention: IG and WCG) and Time 2 (post-intervention: IG, pre-intervention: WCG) that was found non-significant.

In regard with the abovementioned finding, it is possible that the small the small sample size ($N = 46$) of the current study, which reduces statistical power according to Graziano and Raulin (2004), contributed to this difference being found non-significant. On the other hand, previous research has demonstrated that treatment effects could become significant with passing time. (Dadds, et al., 1997) In conjunction with this the present study demonstrated in the intervention group ($n = 25$) that the decline in anxiety symptoms, as reported on the SCAS, only became statistically significant from Time 3 (4-months post-intervention: IG, pre-intervention: WCG) onward. Therefore, it is

possible that with passing time, anxiety symptoms within the wait-list control group will continue to decline and reach statistical significance.

Hence, contrary to the second within group effects hypothesis, there was no significant decline in self-reported anxiety symptoms for the wait-list control group across time, as reported on the SCAS. However, it is possible that, as with the intervention group, the decline in self-reported anxiety symptoms would reach statistical significance with ensuing time.

6.4.2.5   Wait-list control group on the RCMAS

Even though anxiety symptoms reported on the RCMAS was variable across time for the wait-list control group, results indicated that the decline in anxiety symptoms was non-significant: $F(3) = 1.72, p = .17$.

This finding is in contrast to what was expected. Yet, this finding corresponds to the previous finding of the present study regarding the anxiety symptoms, as reported on the SCAS, for the wait-list control group. In addition, the current finding regarding the anxiety symptoms on the RCMAS with the wait-list control group is in accordance with the findings on the RCMAS for the intervention group on the RCMAS. Still, it is possible that since the RCMAS yielded poor internal consistency ($\alpha = .60$) within the sample of participants of the present study the data obtained from the questionnaire are not completely reliable. Compared to what other researchers found, considering only pretest-post-test data, (Barrett & Turner, 2001; Lowry-Webster, et al., 2003; Shortt, Barrett, & Fox, 2001), the finding of the present study regarding wait-list control group's self-reported anxiety on the RCMAS is in contrast with their findings that consistently demonstrated significant improvement from pretest to post-test.

Hence, contrary to the second within group effects hypothesis, no significant decline in RCMAS reported anxiety symptoms was found for participants in the wait-list control group ($n = 21$). However, the possible effect of the poor internal consistency the RCMAS yielded within the current sample should be kept in mind.

6.4.2.6   Wait-list control group on the SEQ-C

Contrary to what was expected, results indicated a decline in reported self-efficacy across time for participants in the wait-list control group ($n = 21$). This decline in self-efficacy was found significant: $F(3) = 4.80, p = .00$. Descriptive data analysis indicated that participants reported very high levels of self-efficacy at Time 1 (pre-intervention: IG and WCG), as was evident from the

negatively skewed data. In addition, the general trend of the data indicated that for the wait-list control group, reported self-efficacy declined from Time 1 onward. Therefore, it would seem that self-efficacy levels for the wait-list control group declined independent of exposure to the intervention. Even though the decline in self-efficacy levels was significant it would seem that the decline in self-efficacy levels could be attributed to regression to the mean, rather than the effects of the intervention. In this regard it has been demonstrated that self-efficacy and anxiety are negatively correlated (Muris, 2002), hence low levels of self-efficacy were related to high levels of anxiety. Drawing from this finding – when the high levels of self-reported anxiety symptoms on the SCAS are considered – it would be expected that participants in the wait-list control group should have reported low levels of self-efficacy at Time 1, Time 2, and Time 3. And, as self-reported anxiety symptoms on the SCAS improved from Time 3 (4-months post-intervention: IG, pre-intervention: WCG) to Time 4 (6-months post-intervention: IG, post-intervention: WCG) it would be expected that self-efficacy would have improved. However, the present study did not find evidence of the above. The present study consequently could not find support for the hypothesis that the current anxiety intervention would improve participants' self-efficacy. Therefore, in contrast with the hypothesis by Muris (2002), the present study did not find evidence that the anxiety intervention improved the self-efficacy status of participants.

Contrary to the second within group effects hypothesis, no significant increase self-efficacy levels across time were found for participants in the wait-list control group ($n = 25$). Instead, a significant decline in reported self-efficacy was detected, which seems to be attributable to regression to the mean.

6.5   Synthesis and conclusions with regard to treatment efficacy on anxiety

Taken together, from the results of the present study regarding the effectiveness of the FRIENDS programme in reducing participants' anxiety symptoms, the data can be synthesised in the following way:

Anxiety data on the RCMAS yielded non-significant findings throughout. In other words, neither significant between group effects, nor significant within group effects, was found for the data obtained from the RCMAS. Even though data on the RCMAS was relatively variable between each time of testing, there was almost no reduction in scores from Time 1 (pre-intervention: IG and WCG) to Time 4 in both the intervention and wait-list control group as is evident from the non-significant results. However, caution should be taken when deriving conclusions from the data on

the RCMAS since this questionnaire was found to have poor internal consistency within the current sample.

The only significant result for anxiety data obtained from the SCAS was a significant within group effect for *time* in the intervention group. More specifically, the decline in anxiety scores between Time 1 (pre-intervention: IG and WCG) and Time 3, and Time 1 and Time 4 was significant. Therefore, it would seem that – even though the programme effects was not apparent at Time 2 (post-intervention: IG, pre-intervention: wait-list control group), immediately following the intervention – with ensuing time the effect of the FRIENDS programme on participants' anxiety symptoms became statistically significant. In this regard the decline in anxiety symptoms for the wait-list control group between Time 3 and Time 4 was not statistically significant. However, considering the finding for the intervention group, it is possible that the effect of the FRIENDS programme would become statistically significant with ensuing time. The finding that the programme effects only become apparent at follow-up may be attributed to the FRIENDS programme teaching children the necessary coping- and problem solving skills for dealing effectively with anxiety. Therefore, it is possible that as children become more accomplished at using these skills, it is more effective in reducing their anxiety symptoms and helping them cope with a potentially stressful situation. In this regard, a questionnaires measuring coping ability, in addition to the anxiety questionnaires used in the present study, could have proven useful, as this would have shed light on the change participants' ability to cope with stressful situations.
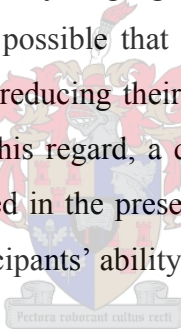
Also, considering the general trend of the data for both the intervention group and the wait-list control group on the SCAS, it is evident that the decline in anxiety symptoms was marked following each group's exposure to the FRIENDS programme. More specifically, the intervention group reported fewer anxiety symptoms at Time 2 (post-intervention: IG, pre-intervention: WCG), following the intervention, than at Time 1 (pre-intervention: IG and WCG). And the downward trend for the reported anxiety symptoms in the intervention group persisted up to Time 4 (6-months post-intervention: IG, post-intervention: WCG). Regarding the wait-list control group's anxiety symptoms, they reported fewer anxiety symptoms at Time 4 (6-months post-intervention: IG, post-intervention: WCG), following the intervention, that at Time 3 (4-months post-intervention: IG, pre-intervention: WCG). And also their anxiety symptoms persisted to remain high from Time 1 through Time 3. Therefore, it seems that there was a general tendency for participants to report fewer anxiety symptoms following exposure to the FRIENDS programme.

On the SCAS there was also no significant between group effects at any of the four times of testing. However, at Time 1 (pre-intervention: IG and WCG) no significant differences should exist between the two intervention conditions regarding the construct of anxiety for participants in the two conditions to be equal at the onset of the study. At Time 2 (post-intervention: IG, pre-intervention: WCG), contrary to what was expected, no significant difference was found between the intervention- and wait-list control group. Yet, at Time 3 (4-months post-intervention: IG, pre-intervention: WCG), the intervention group reported fewer anxiety symptoms compared to wait-list control group. However, this seemingly large difference was found to be non-significant. In this regard it is possible that the difference in SCAS scores between the two groups at Time 3 (4-months post-intervention: IG, pre-intervention: WCG) was found non-significant due to reduced statistical power within the small sample of the present study. At Time 4 (6-months post-intervention: IG, post-intervention: WCG), no significant difference was found between the intervention group and the wait-list control group. Though a non-significant difference was predicted, this finding should be seen in context with the findings at the previous three times of testing. As at all other three times of testing a non-significant difference was found, the non-significant difference at Time 4 cannot be attributed the effect of the intervention.

Four aspects need to be addressed that may have had an influence on participants' reported anxiety symptoms, and therefore on programme effectiveness. These are the exclusion of parental sessions, reading ability of participants, participants' ecological environment, and the use of self-report questionnaires.

Owing to situational constraints in the present study, only children's sessions could be conducted without having any parental sessions. The importance of sessions with the parents should not be ignored. As Barrett, Dadds et al. (1996) demonstrated, the inclusion of parental sessions further enhances treatment outcomes. Therefore, it is possible that the intervention effects obtained in the present study could have been enhanced by the inclusion of parental sessions.

Recent research has demonstrated that the reading and writing ability of South African children are seriously lagging behind their counterparts in other parts of the world. (Western Cape Education Department, 2003). Some of the participants in the present study also seemed to be behind in their reading and writing ability, which posed a problem during the course of the present study. It appeared that some of the participants had difficulty reading the material and they also had difficulty expressing themselves. Although everything was done to accommodate participants, it is still possible that poor reading- and writing ability had an effect on the integrity of the intervention,

as it may have influenced the comprehensibility of the material to some of the participants. For the present investigation, exploring the effect of reading ability on anxiety status was beyond the scope of the present study.

Another important factor that needs addressing – as it could have had an influence on participants' reported anxiety symptoms – is the children's ecological environment. According to the ecological model (Bronfenbrenner, 1979) a person does not function independently of the profound bi-directional influence between the person and his/her ecological environment. Children from this community are faced with the reality of violence and crime, as is evident from crime statistics, (South African Police Service, 2005) as well as low socio-economic status (L. Fourie, Personal communication, May 5, 2006). Therefore, the possible effect of these factors, present in these children's ecological environments, on children's self-reported anxiety symptoms should not be ignored. For the present study, however, exploring the effect of participants' ecological environment on their self-reported anxiety symptoms, fell beyond the scope of the present investigation. When constructing an early intervention and prevention programme for anxiety for use with South African children, however, the influence of these factors should not be ignored. In this regard when assessing the social validity of the FRIENDS programme with children from a non-Australian background, participants recommended that the programme should incorporate more aspects of their culture (Barrett, Moore et al., 2000; Barrett, Sonderegger et al., 2001).

The present study used two self-report anxiety questionnaires, as used in the study by Barrett and Turner (2001). Self-report questionnaires are not without their limitations, but Kendall and Chansky (quoted in Ronan, 1996) state that anxious children commonly tend to report socially desirable answers on self-report questionnaires, resulting in the under-reporting of anxiety symptoms. The possibility of participants faking good in the present study, and the effect that may have had on anxiety scores, cannot be excluded. Thus the addition of more objective assessment techniques, such as clinical interviews, might have added value to the findings of the present study.

In conclusion, SCAS data for the intervention group indicate that there was a significant decline in anxiety symptoms, which only became apparent 4-months post intervention. Yet, it appears that the decline in anxiety symptoms may be attributed to the effect of the FRIENDS programme. SCAS data for the wait-list control group indicate a sharp decline in anxiety symptoms following the intervention. This decline, however, was not statistically significant at post-intervention. As the decline occurred following exposure to the intervention it, therefore, appears to be in response to the effects of the FRIENDS programme. Yet it is possible that in common with the intervention

group, the decline in anxiety symptoms for the wait-list control group may well become statistically significant with ensuing time.

On the other hand, RCMAS data (see Table 2) indicated no significant between group effects or within group effects with regard to anxiety symptoms. However, it should be kept in mind that the RCMAS yielded poor internal consistency. Therefore, data obtained from this questionnaire are inconclusive.

6.6 Synthesis and conclusions with regard to treatment efficacy on self-efficacy

Taken together, the following conclusions regarding the effectiveness of the FRIENDS programme in enhancing participants' self-efficacy could be drawn from the synthesis of the results:

Self-efficacy data indicated that participants in both the intervention- and wait-list control group in the present study reported high levels of self-efficacy at Time 1 (pre-intervention: IG and WCG), as was evident from the negatively skewed data. Since it is thought that low self-efficacy is associated with anxiety (Muris, 2002; Nevid et al., 2000) it was expected that, given that participants reported high levels of anxiety on the SCAS, participants would also report low levels of self-efficacy at Time 1. Contrary to what was expected, participants however reported high levels of self-efficacy. Furthermore, it appeared that the high level of self-efficacy reported could be attributed to participants "faking good".

Also, when considering within group effects, it was expected that the FRIENDS programme would enhance participants' level of self-efficacy across time. However, the self-efficacy of both the intervention group and the wait-list control group demonstrated a significant decline. In this regard, when the general trend of the self-efficacy data is considered, it is evident that the decline seemed to occur independently of exposure to the intervention. More specifically the intervention group reflected a decline in self-efficacy from Time 1 (pre-intervention: IG and WCG) to Time 3 (4-months post-intervention: IG, pre-intervention: WCG), whereafter self-efficacy increased between Time 3 and Time 4 (6-months post-intervention: IG, post-intervention: WCG). Yet, for the wait-list control group self-efficacy declined from Time 1 to Time 4. Therefore, it would appear that the decline of self-efficacy did not happen in response to exposure to the intervention, even though the decline was significant across time for both groups. Instead, it is possible that the decline in self-efficacy could be attributed to regression to the mean, considering the extreme scores at Time 1. Therefore, it appears that the FRIENDS programme had no effect on the self-efficacy of participants.

In addition, regarding the between group effects, there was no significant difference in the level of self-efficacy between the intervention group and the wait-list control group at all four times of testing. However, at Time 1 (pre-intervention: IG and WCG) no significant differences should exist between the two intervention conditions regarding the construct of self-efficacy for participants in the two conditions to be equal at the onset of the study. At Time 2 (post-intervention: IG, pre-intervention: WCG), in contrast to what was expected, there was no significant difference between the intervention group and the wait-list control group. It was expected that the intervention group would report a significantly higher level of self-efficacy compared to the wait-list control group since the intervention group had received the intervention. Also, at Time 3 (4-months post-intervention: IG, pre-intervention: WCG) there was still no significant difference between the intervention- and the wait-list control group. Once again, at Time 3, a significant difference was expected. Finally at Time 4 (6-months post-intervention: IG, post-intervention: WCG) there was also no significant difference between the intervention group and the wait-list control group. Although a non-significant difference was predicted at Time 4, this finding should be seen in context with the findings at the previous three times of testing. As at all other three times of testing a non-significant difference was found, the non-significant difference at Time 4 cannot be attributed the effect of the intervention. Therefore, as with the within group effects, it appears that the FRIENDS programme had no effect on the self-efficacy of participants.

In conclusion, it appears that the decline in self-efficacy scores across time occurred independently of exposure to the intervention. Rather, it seems that this decline could be attributed to regression to the mean. Also, since there were no significant difference between the two groups at Time 2 (post-intervention: IG, pre-intervention: WCG) and Time 3 it seems that the intervention had no effect on self-efficacy. Therefore, it would appear that the FRIENDS programme had no effect on participants' level of self-efficacy.

6.7   Chapter summary

In Chapter 6 the findings of the present study were discussed. The findings of the analysis were addressed relating to the internal consistency of the questionnaires used in the present study. The implication of the results from the descriptive analyses regarding age, gender, anxiety data, and self-efficacy data was addressed. Also, the results of the main analysis of the present study were discussed. Finally, this chapter concluded with a synthesis findings of the present study.

The subsequent chapter will include a summary of the main findings of the present study, recommendations for subsequent research, and limitations of the present study.

CHAPTER 7

SUMMARY OF FINDINGS, RECOMMENDATIONS AND CRITICAL REVIEW

7.1   Introduction

In this chapter a summary of main findings is presented, in addition to a discussion of limitations of the present study and recommendations for further research.

7.2   Main findings

In the present study the following were the main findings regarding the effectiveness of the FRIENDS programme in reducing participants' anxiety and enhancing participants' self-efficacy:

7.2.1   Findings regarding the efficacy of the FRIENDS programme on anxiety symptoms

7.2.1.1   Between group effects

- Considering the between group effects on the SCAS, no significant differences were found between the intervention group ($n = 25$) and wait-list control group ($n = 21$) at any of the four times of testing. This finding was in contrast to what was expected, since significant differences between the intervention group and wait-list control group were expected at Time 2 (post-intervention: IG, pre-intervention: WCG) and Time 3 (4-months post-intervention: IG, pre-intervention: WCG). However, at Time 3, the intervention group ostensibly reported significantly less anxiety symptoms than the wait-list control group. However, results indicated that this difference was statistically non-significant. This result may be ascribed to the small sample size as, according to Graziano and Raulin (2004), small sample sizes result in reduced statistical power. Therefore, it is possible that a true difference between the intervention group and wait-list control group did exist, yet could not be statistically supported.

- With regard to the between group effects on the RCMAS, no significant difference was found between the intervention group ($n = 25$) and the wait-list control group ($n = 21$) at any of the four times of testing. However, as the RCMAS yielded poor internal consistency ($\alpha = .60$) within the present sample, the data obtained from this questionnaire do not reliably reflect the underlying construct. Therefore, data obtained from this questionnaire should be interpreted with care.

7.2.1.2   Within group effects

- Regarding the within group effects on the SCAS, the only statistically significant effect regarding anxiety symptoms was for *time* in the intervention group (*n* =25). Participants in the intervention group reported significantly fewer anxiety symptoms at Time 3 (4-months post-intervention: IG, pre-intervention: WCG) and at Time 4 (6-months post-intervention: IG, post-intervention: WCG), following exposure to the intervention, compared to Time 1 (pre-intervention: IG and WCG). Although there was a sharp decline in anxiety symptoms for the wait-list control group (*n* = 21) between Time 3 (4-months post-intervention: IG, pre-intervention: WCG) and Time 4 (6-months post-intervention: IG, post-intervention: WCG), this was not statistically significant. However, it is possible that, as with the intervention group, the decline in anxiety symptoms for the wait-list control group would only reach statistical significance with ensuing time. In this regard Dadds et al., (1997) found a significant difference between the intervention condition and control condition at 6-months follow-up, even though there was no significant difference between the two groups at post-intervention. Also it appeared that within each group, participants reported fewer anxiety symptoms following exposure to the intervention.

- Regarding the within group effects on the RCMAS no significant effect was found for *time* in either the intervention group (*n* = 25) or the wait-list control group (*n* = 21). In other words, the minimal decline in anxiety symptoms from Time 1 (pre-intervention: IG and WCG) to Time 4 (6-months post-intervention: IG, post-intervention: WCG) in both the intervention group and the wait-list control group was not significant. However, RCMAS yielded poor internal consistency within the present sample, thus the data obtained from this questionnaire do not reflect the underlying construct reliably. Hence the data obtained from the RCMAS need to be interpreted cautiously.

7.2.1.3   Synthesis and conclusion

From the synthesis of the data it appeared that the significant decline in anxiety symptoms for the intervention group (*n* = 25), which only became apparent at 4-months post-intervention, could be attributed to the effect of the FRIENDS programme. For the wait-list control group (*n* = 21) there was a sharp decline in anxiety symptoms following the intervention. However, the decline was not statistically significant at post-intervention. Yet the decline appears to be in response to the effects of the FRIENDS programme as the decline occurred following the intervention. Also, it is possible

that as with the intervention group, the decline in anxiety symptoms for the wait-list control group would become statistically significant with ensuing time.

Data on the RCMAS indicated no significant between group effects or within group effects with regards to anxiety symptoms. However, it should be kept in mind that the RCMAS yielded poor internal consistency. Therefore, data obtained from this questionnaire are inconclusive.

7.2.1.4   Relation of current findings on anxiety to previous research

Considering data obtained from the SCAS:

- Concerning the between group effects, the present study found no significant difference between the intervention group ($n = 25$) and wait-list control group ($n = 21$) at Time 2 (post-intervention: IG, pre-intervention: WCG) and at Time 3 (4-months post-intervention: IG, pre-intervention: WCG) on the SCAS data. This is in contrast with findings of previous research where significant differences were found between the intervention- and control conditions at post-treatment (Barrett & Turner, 2001; Lowry-Webster et al., 2001; Shortt, Barrett, & Fox, 2001) and at follow-up (Shortt, Barrett, & Fox, 2001; Lowry-Webster et al., 2003).

- With regard to the within group effects on the SCAS data, the present study found a significant effect for *time* within the intervention group ($n = 25$) only from Time 3 (4-months post-intervention: IG, pre-intervention: WCG) onward. For the wait-list control group ($n = 21$) there was no significant effect for *time* between Time 3 (4-months post-intervention: IG, pre-intervention: WCG) and Time 4 (6-months post-intervention: IG, post-intervention: WCG). These findings are in contrast with findings of previous research (Barrett & Turner, 2001; Lowry-Webster, et al., 2001) where a significant effect for time was demonstrated from pre-intervention to post-intervention. However, the finding of the present study that treatment effects only became significant with ensuing time, i.e. from Time 3 onward for the intervention group, is consistent with the findings of Dadds et al. (1997).

Considering data obtained from the RCMAS:

- With regard to the between group effects, the present study found no significant difference between the intervention group ($n = 25$) and the wait-list control group ($n = 21$) at Time 2 (post-intervention: IG, pre-intervention: WCG) and Time 3 (4-months post-intervention: IG, pre-intervention: WCG) on the RCMAS data. This is in contrast with previous research

where significant differences where found between the intervention- and control conditions both directly following the intervention (Barrett & Turner, 2001; Lowry-Webster et al., 2001; Shortt, Barrett, & Fox, 2001) and at follow-up (Shortt, Barrett, & Fox, 2001; Lowry-Webster et al., 2003). However, it should be remembered that in the present study the RCMAS yielded poor internal consistency (α = .60), the effect of which should be kept in mind.

- Regarding the within group effects, the present study found a non-significant effect for *time*, in both the intervention group (*n* = 25) and the wait-list control group (*n* = 21) on the RCMAS data. This is in contrast with other studies where a significant effect for *time* was demonstrated from pre-intervention to post-intervention (Barrett & Turner, 2001; Lowry-Webster et al., 2001). However, in the present study the RCMAS proved to have poor internal consistency (α = .60), therefore conclusions were derived cautiously from RCMAS data.

7.2.1.5   Implications for the South African context

Although the present study found no significant between group effects regarding anxiety symptoms, the present study did find a significant within group effect for *time* on the SCAS data within the intervention group (*n* = 25). It was concluded that the decline in anxiety symptoms across time within the intervention group could be attributed to the effects of the FRIENDS programme. This finding yields promise for universal early intervention- and prevention programmes for childhood anxiety within the South African context. Further research in this regard is merited. More specifically, research should be directed at constructing an anxiety prevention programme that is socially relevant to the South African context. With regard to the programme evaluation, future research could aim to improve on the methodology used in the present study whilst taking into consideration the limitations and considerations of the present study.

7.2.2   Findings regarding the efficacy of the FRIENDS programme on self-efficacy
7.2.2.1   Between group effects

- Regarding the between group effects, no statistically significant differences were found between the intervention group (*n* = 25) and the wait-list control group (*n* = 21) at any of the four times of testing. These findings were contrary to what was expected. In light of the non-significant findings at Time 2 (post-intervention: IG, pre-intervention: WCG) and Time 3

(4-months post-intervention: IG, pre-intervention: WCG), it appeared that the FRIENDS programme did not have an effect on participants' level of self-efficacy.

7.2.2.2 Within group effects

- Considering the within group effects, there was a significant effect for *time* for both the intervention group ($n = 25$) and the wait-list control group ($n = 21$). Also, participants in both groups reported high levels of self-efficacy at Time 1 (pre-intervention: IG and WCG) even though they reported high levels of anxiety symptoms on the SCAS. When the general trend of the data was taken into consideration, it appeared that the decline in self-efficacy levels occurred independently of exposure to the intervention condition. Instead, the decline appeared to be attributable to regression to the mean and not to the intervention, given the extreme scores at Time 1. Therefore, these findings of the present study are in contrast with the hypothesis by Muris's (2002) that anxiety interventions increase children's self-efficacy for dealing with threats whereby reducing their anxiety.

7.2.2.3 Synthesis and conclusion

From the synthesis of the data it appeared that, contrary to what was expected, self-efficacy scored declined across time for both the intervention group and the wait-list control group. However, even though this decline was significant, it appeared from the general trend of the data that the decline in self-efficacy levels occurred independently of exposure to the intervention, and rather seemed to be attributable to regression to the mean. In addition, since there were no significant difference between the two groups at Time 2 (post-intervention: IG, pre-intervention: WCG) and Time 3 it seems that the intervention had no effect on self-efficacy. Consequently it appeared that the FRIENDS programme had no effect on participants' level of self-efficacy.

7.2.2.4 Relation of current findings on self-efficacy to previous research

- As far as the researcher could establish, no other studies investigated the effect of the FRIENDS programme on children's level of self-efficacy. Therefore, no studies could be found to compare the findings of the present study regarding the effect of the FRIENDS programme on participants' level of self-efficacy to those of previous research. The findings of the present study regarding the effect of the FRIENDS programme on the enhancement of self-efficacy are in contrast with the hypothesis by Muris (2002) that the efficacy of childhood anxiety interventions is related to the enhancement of self-efficacy.

7.2.2.5   Implications for the South African context

The present study found neither significant between group effects or within group effects for either the intervention group or the wait-list control group on regarding the level of self-efficacy. Following the synthesis of the data, it was concluded that the FRIENDS programme did not have a significant effect on the self-efficacy levels of the present sample. As this was the first study to the researcher's knowledge that explored the effect of the FRIENDS programme on self-efficacy, further investigation in this regard is merited. In addition, contrary to the findings of the study by Muris (2002), where low self-efficacy was found related to high levels of anxiety symptoms, children in the present study reported high levels of self-efficacy even though they reported high levels of anxiety symptoms on the SCAS. This finding also merits further investigation. Also, the relationship between self-efficacy and anxiety symptoms in South African children should be explored. In this regard, future research could aim to improve on the methodology used in the present study whilst bearing in mind the limitations and considerations of the present study.

7.3   Ethical Issues

The ethical approach of the present study was approved by the Ethics Committee, Faculty of Health Sciences of the Universtiy of Stellenbosch.

For the present study, participants in the control condition were enrolled into a wait-list control group in order not to withhold treatment from participants. Thus the wait-list control group received the intervention following the intervention with the intervention group.

Parents of participants were sent a letter offering free additional psychological assistance should they still be concerned about their child's anxiety symptoms or have any other enquiries (see Addendum A).

7.4   Critical review of the study

7.4.1   Limitations

The following limitations of the present study should be addressed: non-random selection of participants, non-random assignment of participants, the difference in gender composition between the intervention group and wait-list control group, the small sample size, attrition, the exclusion of parental- and booster sessions, poor internal consistency of the translated version of the RCMAS, the number of sessions per week, the time of testing for the post-test, the effect of environmental influences, and the literacy of participants.

One of the most important limitations of the present study was that, owing to situational constraints, an *ad hoc* sample was used. Without random selection, generalisation is limited to similar populations (Graziano & Raulin, 2004). Therefore, generalisation of the results obtained in the present study is limited.

Secondly, owing to situational constraints, participants were not randomly assigned to either the intervention group or wait-list control group in the present study. Instead, a quasi-experimental design was used in the form of a non-equivalent comparison group design. Importantly, randomisation ensures that participants in different conditions do not differ significantly from one another at the onset of the study, whereby controlling for threats to internal validity (Graziano & Raulin, 2004). Notwithstanding, the present study did verify that the intervention group and wait-list control group did not differ significantly from each other at the onset of the study in the most important variables, namely age, gender, anxiety symptoms, and level of self-efficacy. However, the possible influence that non-random assignment may have had on the results of the present study can not be excluded. Therefore, generalisation of results is limited.

Related to the previous limitation is that there were fewer girls in the wait-list control group compared to the intervention group. However, results indicated the difference to be non-significant, there were fewer girls in the wait-list control group than in the intervention group. The possible effect of the difference in gender distribution should not be ignored. With randomisation, the pre-existing difference in gender composition between the two classes could have been circumvented.

The small sample size of the present study is another important limitation. For the present study, 66 participants were recruited and enrolled for participation in this study.

Furthermore the elimination of participant data played an important role in the present study. The data of 20 of the 66 participants initially enrolled in the study, had to be excluded from final data-analysis for the following reasons: Attrition accounted for 8 participants leaving the study; the data of 11 participants who were absent during one of the four times of testing were eliminated from the data-analysis; and the data of 1 participant had to be eliminated as the participant incorrectly completed the questionnaires. This yielded a final statistical sample of 46 participants. Importantly, statistical power is reduced within small sample sizes (Graziano & Raulin, 2004). Therefore, it is possible that the reduced statistical power in the present study contributed to some of the non-significant findings of the present study.

In addition, the exclusion of parental sessions and the two booster sessions with participants, owing to constraints within the research setting, is another limitation. It is possible that the exclusion of the parental sessions and the booster sessions with the children could have reduced the intervention effect and lessened the intervention outcomes. In this regard, Barrett, Dadds et al. (1996) demonstrated that the addition of parental involvement enhances the treatment effect in the treatment of childhood anxiety.

Also, the translated version of the RCMAS yielded poor internal consistency within the present sample of children. As caution had to be taken when the data from this questionnaire were interpreted, results obtained from this data were not conclusive.

Although it is recommended in the FRIENDS manual (Barrett, 2004) that one session is conducted per week, in the current study two sessions per week was conducted with both the intervention group and wait-list control group. This was due to situational limitations within the school that could not accommodate the programme within a time frame of 10 weeks. Instead, the school allocated two periods per week to the programme. Therefore, it is possible that the timing of the sessions might have influenced the outcomes of the programme in the present study.

In the present study, the post-intervention assessment for the wait-list control group (at Time 4) was done two days following their completion of Session 10. This differed slightly with a few days compared to the intervention group where their post-intervention assessment (at Time 2) was done one week following their completion of Session 10. This difference was due to children writing exams during the following week, and therefore the testing at Time 4 could not be done at a later time. It is possible that the difference in assessment times for the post-intervention between the intervention group and wait-list control group might have had an influence on questionnaire scores.

According to Bronfenbrenner (1979), a person does not function independently of the profound bi-directional influence between the person and his/her ecological environment. Participants in the present study, come from a community faced with violence and crime, as is evident from crime statistics, (South African Police Service, 2005) as well as low socio-economic status (L. Fourie, Personal communication, May 5, 2006), the effect of which should not be disregarded. However, it fell beyond the scope of the present study to explore the effect these environmental influences had on participants' anxiety and self-efficacy scores.

Finally, even though children in middle chilhood are expected to have mastered the basic reading and writing skills of language (Turner & Helms, 1995), a recent report by the Western Cape Education Department (2003) it is demonstrated that the literacy of South African children are lagging behind. For the present study, the effect that poor literacy skills may have had on participants' anxiety and self-efficacy scores were not explored as it was beyond the scope of the present study.

Recent research has demonstrated that the reading and writing ability of South African children are seriously lagging behind their counterparts in other parts of the world. (Western Cape Education Department, 2003).

7.4.2 Recommendations

Future research in this regard should, apart from taking into consideration and improving on the limitations of the present study, also take into account:

The current pilot study was directed at a very distinct sample of coloured children from a low socio-economic status background, thus generalisation is limited to similar populations. Therefore, to be able to generalise broader to larger populations, research should be directed at samples of children who are more representative of the broader South African context. In this regard, literature (Muris, Schmidt et al., 2002; Muris et al., 2006, 2004) also emphasises the high risk of children from black communities. Research should also be directed at other high-risk communities such as children from traditionally black communities. Also, the relationship between anxiety and self-efficacy should be explored within other populations.

Also, since the use of self-report measures assessing childhood anxiety pose the problem of under-reporting of anxiety symptoms (Kendall & Chansky quoted in Ronan, 1996), future research should consider incorporating the use of more objective screening methods, such as clinical interviews, or projective screening methods.

The present study used anxiety questionnaires only as an indicator of intervention effects on anxiety symptoms. However, when investigating the effect of a positive coping programme with normative samples, questionnaires such as these may not be appropriate as children's anxiety symptoms could already be within normal range and may result in "floor effects". Therefore, future research could consider the construction and use of a scale that measures positive coping with regard to the skills taught by the intervention.

As a person does not function in isolation of his/her ecological environment (Bronfenbrenner, 1979), research should focus on compiling an anxiety prevention programme, specifically directed at the South African context, that takes into consideration the effect of factors that are present in children's ecological environment. The impact of the unique challenges the South African context poses (such as violence and economic hardship) to children growing up in South Africa should therefore be taken into consideration. In this regard, children from non-Australian backgrounds recommended in the study by Barrett, Sonderegger et al. (2001) that the FRIENDS programme should be more relevant to their culture. Thus when compiling a South African programme the South African context should be taken into consideration.

Some of the children in the present study experienced some difficulty in reading and writing. This posed another problem as it may have influenced the integrity of the intervention. Although the mean age of the children was 12 years and 6 months, and the programme was aimed at children between 7 and 11 years, certain concepts, especially emotional vocabulary seemed to be new to some children. Although it was not the focus of the present study, qualitative evaluation of this aspect needs to be addressed in future research.

7.4.3 Challenging aspects of the study

The following aspects of the presents study were found to be challenging:

- During the administrative phase of the present study, seven schools were approached to participate in the study. Yet, only two schools consented to the study. As the intervention programme consists of 12 sessions (not including the 2 booster sessions), of between 45 to 60 minutes in duration, many schools could not consent to a study of such a large scope as it could have compromised the education time of participants. Thus, gaining access to schools that could accommodate the programme within the school setting proved to be very challenging and required extensive administrative organisation. The two schools that consented were part of previous explorative research (Burkhardt, et al., 2003). Owing to the low response rate and of parents enrolling their children in the study, the present pilot study was conducted at one school only.

- Gaining parental consent from parents allowing their children to participate in the study was challenging. Many parents initially seemed reluctant to enrol their children in an intervention programme for childhood anxiety. Stigmatisation may have contributed to parents' motivation. Parents' absence from information and feedback sessions may be ascribed to

logistical and practical difficulties, such as long work hours and difficulties regarding transportation.

- The present study was demanding with regard to time, as it involved continuous networking and negotiations with all role-players, such as the Western Cape Education Department, the principals and the broader community.

7.4.4   Aspects of the study that added to its value

Although the present study was in essence a replication of the study by Barrett and Turner (2001), the present study had the following unique contributions:

- As far as the researcher could establish, no other studies investigated the effectiveness of the FRIENDS programme within a sample of South African children.

- In adddition, as far as the researcher could establish, no other studies investigated the effectiveness of the FRIENDS programme for enhancing children's self-efficacy.

- Compared to similar studies that investigated the effectiveness of the FRIENDS programme (Barrett, Moore et al., 2000; Barrett & Turner, 2001) using once-off pre-test-post-test designs, the design of the present study such that it followed participants over a course of 10 months, therefore allowing participants to be followed over a course of time.

- Compared to similar studies where wait-list control conditions were also used (Barrett, Moore et al., 2000; Barrett & Turner, 2001; Lowry-Webster, et al., 2001; Lowry-Webster, et al., 2003; Shortt, Barrett, & Fox, 2001) the design of the present study was such that the wait-list control group received the intervention during the course of the study, allowing the treatment outcomes of the intervention group and wait-list control group to be compared.

- The present study was an attempt to address the need for an intervention programme that could target childhood anxiety amongst South African children, as the present study empirically explored the effectiveness of an existing CBT prevention- and early intervention programme with a sample of South African children.

7.5   Concluding remarks

Generally, participants perceived the program as child-friendly and enjoyable as was evident from their enthusiastic participation therein. Informal feedback from children included remarks such as "we enjoyed playing the games" and "we learned a lot about our 'feelings' ". Thus it would seem that there is a definite place for child-friendly interventions teaching children coping skills. However, for future research, the focus should fall on either strategies that would enhance the programme outcomes that was reported in the present study by taking the limitations and recommendations into consideration, or on constructing a programme more relevant to the social context of South African children.
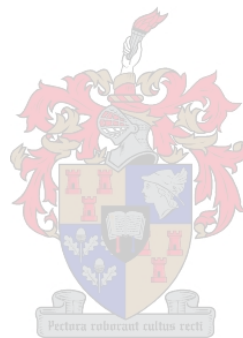
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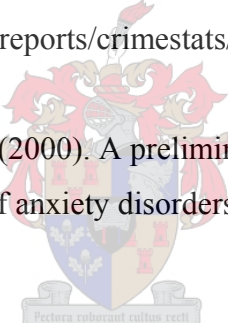
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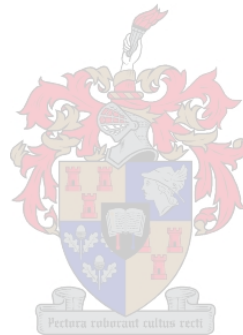
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ADDENDUM A

LETTER TO PARENTS: COMPLETION OF RESEARCH PROJECT

21 September 2006

Geagte Ouers en Kinders, Skoolhoof en Personeel

Bedankingsbrief: Navorsingsprojek

Die navorsingsprojek oor die program vir die voorkoming van angssimptome, waaraan u kind deelgeneem het, het ten einde geloop. Graag wil ons u, langs hierdie weë bedank vir u bydrae tot die projek deur die deelname van u kind.

Vanuit die resultate van die studie, om die impak van die program te monitor, blyk dit dat die kinders as 'n groep baat gevind het by die vaardighede wat in die program vervat is.

Indien u egter enige navrae het, of van enige verdere gratis sielkundige dienste vir u kind gebruik wil maak, is u welkom om Dr. H. Loxton te kontak (sien kontakbesonderhede hier onder).

Graag wil ons hiermee ook die kinders bedank vir hulle samewerking en bydrae tot die projek. Ons vertou dat hulle die deelname aan die projek geniet het.

Laastens, 'n dankbetuiging aan die skoolhoof en sy personeel, vir hulle samewerking en ongelooflike organiseringsvermoë om die projek te kon akkomodeer oor 'n tydperk van 10 maande.

Vriendelike groete,

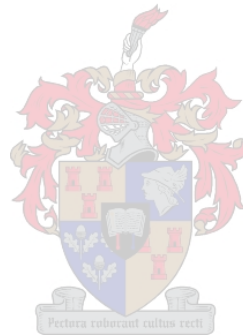Mej. J. Mostert (MSc Sielkunde student)　　　Dr. H.S. Loxton (Supervisor)
　　　　　　　　　　　　　　　　　　　　　　　Departement Sielkunde
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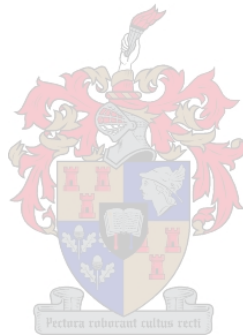　　　　　　　　　　　　　　　　　　　　　　　Tel no:

ADDENDUM B

LETTER FROM WESTERN CAPE EDUCATION DEPARTMENT: PERMISSION TO CONDUCT STUDY (2005)

ADDENDUM C

LETTER FROM WESTERN CAPE EDUCATION DEPARTMENT: PERMISSION TO CONDUCT STUDY (2006)

ADDENDUM D

LETTER TO PRINCIPALS: PERMISSION TO CONDUCT STUDY

18 Julie 2005

Die Skoolhoof

Geagte Meneer

<u>Inligtingsbrief aan Omliggende Skole: Kinderangs Navorsingsprojek</u>

Vorige navorsing het aangetoon dat daar 'n hoë voorkoms van angssipmtome onder Suid-Afrikaanse kinders is, soos in die studie deur Burkhardt, Loxton en Muris (2003) (sien Addendum A), wat aangetoon het dat baie Suid-Afrikaanse kinders aan ernstige vrees en angssimptome ly. In die Wes-Kaap, alleen, is die voorkoms van ernstige angssimptome onder kinders geraam om tussen 22% en 25.6% te wees (Perold, 2001), 'n voorkomssyfer wat baie hoër is as dié van ander lande. 'n Ander studie waaraan plaaslike skole in Stellenbosch deelgeneem het, het verskeie kinders geïdentifiseer met hoë vlakke van angssimptome en wat gevolglik 'n hoë risiko het om angsversteurings te ontwikkel. Sommige resultate, onder andere, het aangetoon dat dogters meer angssimptome rapporteer as seuns en dat die voorkoms van angssimptome verskil tussen kultuurgroepe (Neumann, 2004) (sien Addendum B vir kort verslag).

Ernstige angssimptome het die potensiaal om verskeie probleme vir kinders te veroorsaak. Dit mag inmeng met kinders se daaglikse aktiwiteite en kan lei tot probleme soos skoolweiering, depressie, fisiese klagtes, swak selfbeeld en swak sosiale aanpassing. Akademiese probleme, soos swak skoolprestasie en konsentrasie probleme, mag ook algemeen geassosieer word met ernstige angssimptome in kinders. Daar blyk 'n neiging te wees vir angstige kinders om angs te ervaar tot in volwassenheid. Dit is dus belangrik om kinders, wat 'n risiko vir ernstige angssimptome het, te identifiseer en behandeling so vroeg as moontlik te begin.

Na uitgebreide navorsing oor angs in kinders en vele program-uitkoms studies, het Dr. Paula Barrett en haar kollegas Hayley Webster en Cynthia Turner 'n program saamgestel om angstige kinders te help. Die program, die "FRIENDS for Children" leer kinders hoe om angs effektief te hanteer. Verskeie navorsers het bevind dat die program angssimptome suksesvol verminder en dat dit kinders help om angswekkende situasies te hanteer (Shortt, Barrett, & Fox, 2001). Dit is ook al bevind dat die program-uitkomste oor die langtermyn volhou word. Tans word die "FRIENDS for Children" in Australië as deel van die skole-leerplan geïmplimenteer – met groot sukses (Barrett, & Turner, 2001).

"FRIENDS for Children" is gebaseer op Kognitiewe-Gedragsterapie, wat gebaseer is op die beginsel dat wanfunksionele gedrag volg op wanfunksionele denke. Die program bestaan uit 10 weeklikse sessies van ongeveer 'n uur elk waartydens kinders deelneem aan kindervriendelike aktiwiteite waarin hulle die vaardighede geleer word wat nodig is om angssimptome effektief te hanteer (Barrett, Webster, & Turner, 2000). Van die vaardigehede wat geleer word sluit onder meer in: die identifikasie van fisiese simptome van angs, ontspanningstegnieke, identifikasie en modifikasie van teen-produktiewe gedagtes en probleemoplossingsvaardighede (Barrett, 2000) – wat alles bydrae tot die meer effektiewe hantering van angs.

Op die oomblik het Suid-Afrika nie 'n effektiewe voorkomings- en vroeë intervensieprogram vir kinders met ernstige angssimptome nie. Met dit ingedagte, is ons tans besig met 'n studie om die toepaslikheid en effektiwiteit van die FRIENDS program vir die Suid-Afrikaanse konteks te bepaal. Toestemming hiervoor is reeds toegestaan deur die Departement van Onderwys (Addendum C).

Vervolgens versoek ons u vriendelik om die program te implimenteer met die Graad 6'e. Dus rig ons 'n verdere vriendelike versoek om die ouers van die Graad 6'e in kennis te stel oor die studie en die beskikbaarheid van die program vir enige kind wat tans ernstige angssimptome ervaar. Ingesluit vind asseblief 'n uitnodigingsbrief en toestemmingsvorm aan ouers van voornemende deelnemers aan die program.
Graag verskaf ons ons kontak-besonderhede sodat u met ons in verbinding kan tree vir enige verdere inligting in hierdie verband.

U samewerking en hulp in hierdie verband, sal innig waardeer word.

Vriendelike groete,

J.J. Mostert (Student)   Dr. H.S. Loxton (Supervisor)

   Departement Sielkunde

    Universiteit van Stellenbosch

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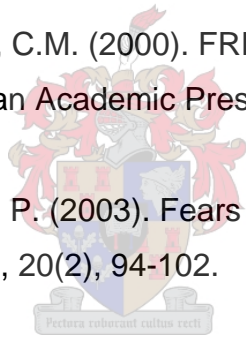
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    Journal of Clinical Child Psychology, 30(4), 525-535.

ADDENDUM E

LETTER TO PARENTS: PARENTAL CONSENT AND CHILD ASSENT

Geagte …………………………………………..

Navorsingsprojek

Hierdie brief word aan u gestuur omdat u reeds aangedui het dat u kind mag deelneem aan die projek wat handel oor die "FRIENDS for Children"-program. Langs hierdie weë wil ons u eerstens bedank vir u samewerking en u bereidwilligheid om toestemming te verleen dat u kind mag deelneem aan die projek.

Soos reeds voorheen verduidelik, behels die projek die aanleer van spesifieke probleemoplossings- en hanteringsvaardighede wat kinders kan help om alledaagse stresvolle gebeure beter te hanteer. Alhoewel vele studies in ander lande, onder andere Australië, gedoen is oor die "FRIENDS for Children"-program, is daar nog nie voorheen navorsing in Suid-Afrika daaroor gedoen nie. Die "FRIENDS for Children"-program (Barrett, Webster, & Turner, 2000) is onlangs deur die **Wêreld Gesondheidsorganisasie** (WHO, 2004) onderskryf as 'n effektiewe voorkomingsprogram vir die hantering van angssimptome by kinders. U kind is uitgenooi om deel te neem aan die projek in 'n poging om 'n program daar te stel en na te vors om sodoende uiteindelik ook ander Suid-Afrikaanse kinders, wat angssimptome ervaar, te kan help.

Alhoewel daar geen finansiële voordeel sal wees vir deelname aan die projek nie, kan u kind steeds **baat vind** daarby deurdat die program daarop gerig is om kinders se probleemoplossings- en hanteringsvaardighede uit te brei sodat hulle daardeur spanning en angs beter kan hanteer. **Geen nadelige gevolge** vir deelname aan die program is nog gerapporteer nie, soos blyk uit vele uitkomste studies (onder andere Barrett, & Turner, 2001 en Shortt, Barrett, & Fox, 2001).

Die projek behels dat u kind sal deelneem aan ongeveer 10 sessies van 40 minute, wat in oorleg met die skool tydens skool-ure gereël word. Die sessies bestaan uit kindervriendelike aktiwiteite wat ten doel het om kinders probleemoplossings- en hanteringsvaardighede te leer. U kind sal ook by 2 geleenthede gevra word om 'n vraelys oor angssimptome te voltooi. Alle inligting sal **vertroulik en anoniem** hanteer word. Dit beteken dat wanneer die uitkomste van die programevaluering byvoorbeeld gepubliseer word, geen inligting herlei sal kan word tot 'n spesifieke skool of kind nie.

Soos reeds genoem, word die toestemming, wat u reeds vir deelname van u kind verleen het, waardeer. U kind se *ingeligte toestemming* vir deelname aan die projek word ook verlang en 'n vriendelike versoek word tot u gerig om asseblief die onderstaande vorm saam met u kind te voltooi en dit binne een week in die meegaande verseëlde koevert aan die klasonderwyser terug te besorg.

Indien u enige navrae in hierdie verband het, of hulp benodig met die invul van die vorm, kan u my gerus kontak by: _____. U is ook welkom om Dr H.S. Loxton (supervisor) te kontak by _____.

Vriendelike groete,

Jemona Mostert   Dr Helene Loxton
(MSc – Student: Navorser)   (Supervisor)

Verwysings

Barrett, P.M., & Turner, C.M. (2001). Prevention of anxiety symptoms in primary school children: Preliminary results from a universal school-based trial. *British Journal of Clinical Psychology, 40*, 399-410.

Barrett, P.M., Webster, H., & Turner, C.M. (2000). *FRIENDS for children – group leader's manual.* Bowen Hills: Australian Academic Press.

Shortt, A.L., Barrett, P.M., & Fox, T. (2001). Evaluating the FRIENDS program: A cognitive-behavioural group treatment for anxious children and their parents. *Journal of Clinical Child Psychology, 30*(4), 525-535.

World Health Orginazation. (2004). *Prevention of mental disorders: Effective interventions and policy options.* Geneva: Author.

Voltooi asseblief die volgende:

A) Ingeligte toestemming van minderjarige

Ek (naam van kind/minderjarige) …………………………………..............……………. is genooi om deel te neem aan bogenoemde navorsingsprojek.

- My ouers het die besonderhede van bogenoemde navorsingsprojek aan my verduidelik en ek verstaan wat hulle aan my gesê het.

- Hulle het ook aan my verduidelik dat die projek die volgende insluit: afneem van vraelyste en deelname aan kindervriendelike aktiwiteite.

- Ek weet ook dat ek te eniger tyd aan die navorsingsprojek kan onttrek indien ek ongelukkig is.

- Deur my naam hieronder in te vul, onderneem ek om vrywillig aan die navorsingsprojek deel te neem. Ek bevestig ook dat ek nie deur my ouers of navorser gedwing is om deel te neem nie.

....

Naam van kind   Onafhanklike getuie

(Deur kind geskryf te word indien moontlik)

B) Verklaring deur ouer/wettig voog

Met die ondertekening van hierdie dokument onderneem ek, (*naam van ouer/wettige voog*) …………...................................….., om my kind *(naam van kind)* …………...................................….., wat .... jaar oud is, te laat deelneem aan 'n navorsingsprojek getiteld: "Pilot study of the effectiveness of the FRIENDS program in a South African sample"/ "Loodsstudie oor die effektiwiteit van die FRIENDS-program in 'n Suid-Afrikaanse steekproef").
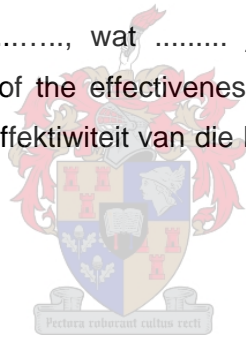
Ek verklaar dat:

- Ek hierdie inligtings- en toestemmingsvorm gelees het of aan my laat voorlees het en dat dit in 'n taal geskryf is waarin ek vaardig en gemaklik mee is.

- My kind moet instem om aan die navorsingsprojek deel te neem as hy/sy ouer as 7 jaar is, en dat sy/haar INSTEMMING op hierdie vorm aangeteken sal word.

- Ek geleentheid gehad het om vrae te stel en dat al my vrae bevredigend beantwoord is.

- Ek verstaan dat deelname aan hierdie projek **vrywillig** is en dat daar geen druk op my geplaas is om my kind te laat deelneem nie.

- My kind te eniger tyd aan die projek mag onttrek en dat hy/sy nie op enige wyse daardeur benadeel sal word nie.

- My kind gevra mag word om aan die projek te onttrek voordat dit afgehandel is indien die navorser van oordeel is dat dit in sy/haar beste belang is.

Geteken te (*plek*) ....……………. op (*datum*) …………...………... 2006.

....

Handtekening van ouer/wettige voog   Handtekening van getuie

C) Verklaring deur navorser

Ek, Jemona Mostert, verklaar dat:

- Ek die inligting in hierdie dokument verduidelik het aan

  …………………...............................…………..

- Ek hom/haar aangemoedig het om vrae te vra en voldoende tyd gebruik het om dit te beantwoord.
- Ek tevrede is dat hy/sy al die aspekte van die navorsingsprojek soos hierbo bespreek, voldoende verstaan.
- Ek nie 'n tolk gebruik het nie.

Geteken te (*plek*) ....…………….. op (*datum*) …………...……….. 2006.

...   **...**

Handtekening van navorser   Handtekening van getuie