

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

**AN INVESTIGATIVE STUDY OF A COGNITIVE-BEHAVIOURAL AND A
BEHAVIOURAL TREATMENT FOR CHILDHOOD ANXIETY DISORDERS**

A thesis presented in partial fulfillment of the requirements for the degree
of
Doctor of Philosophy
in Psychology
at Massey University, Palmerston North,
New Zealand.

Caryl Ann Huzziff

2004

ABSTRACT

Cognitive-behavioural treatment (CBT) approaches have been designed to provide strategies for children to reduce unwanted anxiety to more normal and manageable levels. A meta-analytic review of overseas outcome studies done as a precursor to the main studies of this thesis (Huzziff et al., 2004) indicates a CBT-based treatment programme (Kendall, Chansky, Kane, Kim, Kortlander, Ronan, Sessa, & Siqueland, 1992; Ronan & Deane, 1998) to be effective for children diagnosed with an anxiety disorder. The present study used a multiple baseline across participants design and addressed the need for increased knowledge of two primary CBT components (cognitive plus behavioural and behavioural alone). Two primary objectives of the study were: (1) to replicate previous research findings for this CBT programme within a New Zealand sample and (2) to investigate the effects of the behavioural components of the CBT programme. The final, and more exploratory aspect of the study was to compare the immediate and long-term treatment effects of the CBT programme with the behavioural treatment (BT) components alone. It was hypothesised that the CBT and the BT programmes would be effective for New Zealand children. Furthermore, it was hypothesised that children, regardless of treatment allocation, would benefit similarly from treatment. In this study, a manualised, 16-session CBT programme and a manualised, eight-session BT programme were used with six children each (total N = 12), aged 6 to 12 years, with anxiety disorders. A single-case research design was used. Children were randomly allocated to condition, using a yoked methodology to allow for selected group comparisons. Diagnoses, parent and teacher reports, and child self-reports were used to assess child treatment outcome. Additional measures assessed whether the programmes designed for children were capable of producing change in anxiety (and depression) for parents. Overall, the results replicated previous outcome findings for CBT studies. The results showed that the majority of participants, regardless of treatment allocation, (a) no longer met diagnostic criteria for an anxiety disorder, (b) had an increased ability to cope and decreased anxiety related problems, and (c) maintained treatment gains across 3-, 6-, and 12-month follow-up. Overall, the BT condition produced more initial changes in targeted areas of functioning than the first half of CBT and more than CBT as a whole. However, at 12-month follow-up, the CBT condition appeared to show greater effectiveness. Also, for parents with elevated distress scores at pre-treatment, positive change across condition was found. The

findings are discussed and considered with reference to the role of cognitive and behavioural treatment components, potential benefits for parent functioning, research limitations, and possible avenues for future research. The present study's results have implications for informing future research regarding therapist choice of treatment modality and tailoring therapy to individual clients.

ACKNOWLEDGEMENTS

First, and foremost I wish to thank Dr Kevin Ronan for his guidance and supervision. His patience, fostering spirit, and above all, confidence in me throughout this project motivated me to complete a job that at times felt impossible.

Thanks are due to my second supervisor, Dr Allan Winton, for comments on thesis drafts and behavioural expertise. For their statistical expertise I would like to thank Dr Ross Flett and Dr John Spicer. For her time and clinical expertise, Dr Rebecca Story.

I would like to thank the staff at the Massey University Psychology Clinic for their support and assistance during the treatment and assessment phase of my project. Special thanks go to Dr Sally Wills and Robyn Girling-Butcher, the other members of the research team. Special thanks also go to the children and parents who participated in the research.

I would like to thank those who supported me behind the scenes. Dr John Podd for his guidance in leading me away from my thesis alternative – a life on the high seas. Dr Melanie Martin for considering joining me in my thesis alternative. Dr Gillian Madison-Smith and Dr Cathie Collinson for all the ‘sanity’ checks. Tricia Stuart for her endless editing assistance, et cetera.

On a personal note, I would like to thank my family, Tom and Fay Huzziff, Robyn Vertongen and Jim Graham for their patience, understanding, and support. Finally, special thanks go to my daughter, Ana – a wee blessing, who helped motivate the completion of this thesis.

TABLE OF CONTENTS

ABSTRACT	I
ACKNOWLEDGEMENTS	III
TABLE OF CONTENTS	V
LIST OF FIGURES	IX
LIST OF TABLES	X
CHAPTER 1: INTRODUCTION	1
DEFINITIONS	2
NORMATIVE DATA	2
MALADAPTIVE FEARS AND ANXIETIES	4
DIAGNOSIS	5
ASSESSMENT	7
TREATMENT	8
SUMMARY	9
CHAPTER 2: ANXIETY DISORDERS AND STRUCTURE	11
DIAGNOSES AND CLASSIFICATION	11
Specific Anxiety Disorders	12
Prevalence and Comorbidity	13
ANXIETY STRUCTURE	14
SUMMARY	17
CHAPTER 3: COGNITIVE AND BEHAVIOURAL THEORIES OF CHILDHOOD ANXIETY	19
BEHAVIOURAL THEORIES	19
Classical/Respondent Conditioning	19
Operant Conditioning.....	21
Two-Factor Model	23
Modelling	23
COGNITIVE THEORIES	24
Information processing.....	25
A COGNITIVE-BEHAVIOURAL MODEL.....	29
Tripartite/Neo-conditioning Model.....	29
DEVELOPMENTAL CONSIDERATIONS.....	30
SUMMARY	31
CHAPTER 4: MULTIMODAL ASSESSMENT	33
THE CHILD CLIENT	33
Developmental and Contextual Considerations	34

COGNITIVE-BEHAVIOURAL ASSESSMENT METHODS.....	35
Utility and Quality	35
Assessment Methods.....	36
Behavioural Assessment.....	41
Cognitive Assessment.....	45
Physiological Assessment.....	46
SUMMARY.....	47
CHAPTER 5: TREATMENT.....	49
PSYCHOTHERAPY OUTCOME.....	49
BEHAVIOUR THERAPY.....	50
Systematic Desensitisation.....	51
Modelling.....	52
Contingency Management.....	53
COGNITIVE SELF-CONTROL TRAINING.....	54
COGNITIVE-BEHAVIOURAL THERAPY.....	55
COGNITIVE-BEHAVIOURAL THERAPY: MANUALISED TREATMENT.....	56
Treatment Research.....	58
Individual-Based CBT.....	59
Family- and Group-Based CBT.....	60
COMPARATIVE RESEARCH: BT VERSUS CBT.....	62
SUMMARY.....	64
CHAPTER 6: RESEARCH PROPOSAL.....	65
RESEARCH RATIONALE.....	65
SUMMARY OF OBJECTIVES.....	67
Objective One.....	67
Objective Two.....	67
Objective Three.....	67
Objective Four.....	67
DESIGN RATIONALE.....	68
Manualised Treatment.....	68
Single-Case Research Design.....	69
SUMMARY OF HYPOTHESES.....	70
SUMMARY.....	71
CHAPTER 7: METHOD.....	73
PARTICIPANTS.....	73
MEASURES.....	74
Structured Diagnostic Interview.....	74
Children's Self-Report Measures.....	78
Parent Measures.....	89
Parent Self-Report Measures.....	92
Teacher Report.....	94
Therapy Measures.....	97
History and General Demographic Information.....	98
DESIGN.....	99

PROCEDURE	100
Recruitment	100
Assessment.....	101
Random Allocation	101
Setting and Therapist.....	103
Treatment	103
Treatment Materials	105
Assessment and Treatment Integrity.....	105
Ethical Considerations	106
CHAPTER 8: RESULTS.....	109
TREATMENT FIDELITY AND BOOSTER SESSIONS	109
DIAGNOSTIC RELIABILITIES	109
INDIVIDUAL CASE STUDY RESULTS: COGNITIVE BEHAVIOURAL TREATMENT	110
Child Diagnoses	110
Child Reports	110
Parent Reports	115
Teacher Reports	117
Parent and Child Reports Across Baseline, Treatment and Post-Treatment.....	118
Parent Self-Report.....	125
Therapy	126
Clinical Significance	128
INDIVIDUAL CASE STUDY RESULTS: BEHAVIOURAL TREATMENT	129
Child Diagnoses	129
Child Reports	130
Parent Reports	132
Teacher Reports	136
Parent and Child Reports Across Baseline, Treatment and Post-Treatment.....	136
Parent Self-Report.....	141
Parent Self-Report.....	142
Therapy	143
Clinical Significance	145
COMPARATIVE TREATMENT ANALYSES: WITHIN AND BETWEEN TREATMENT	
CONDITION	146
Power and Effect Size	146
Within Group Analyses.....	147
Comparative Treatment Group Analyses: Pre-treatment.....	150
Comparative Treatment Group Analyses: Treatment outcome	152
CHAPTER 9: DISCUSSION	155
SUMMARY OF MAJOR FINDINGS.....	155
Objective One: Replication of Previous Research Findings	156
Objective Two: The Role of Behavioural Treatment Components	158
Objective Three: Long Term effects of CBT and BT	160
Objective Four: Secondary Effects of Treatment for Parents	161
INTERPRETATION AND IMPLICATIONS	161
LIMITATIONS OF THE PRESENT STUDY	165
RECOMMENDATIONS FOR FUTURE RESEARCH.....	169
CONCLUSION.....	172

REFERENCES.....	175
APPENDIX A: SPECIFIC ANXIETY DISORDERS	195
APPENDIX B: META-ANALYSIS OF MANUALISED CBT FOR ANXIOUS YOUTH..	197
APPENDIX C: PARTICIPANT SUMMARY	215
CBT PARTICIPANTS	215
Participant 02	215
Participant 03	215
Participant 06	216
Participant 07	216
Participant 09	216
Participant 12	217
BEHAVIOURAL TREATMENT PARTICIPANTS	217
Participant 01	217
Participant 04	218
Participant 05	218
Participant 08	219
Participant 10	219
Participant 11	219
APPENDIX D: INFORMATION SHEETS FOR PARENTS/GUARDIANS	221
APPENDIX E: INFORMATION SHEET FOR CHILDREN	223
APPENDIX F: PARENT/GUARDIAN CONSENT FORM	225
APPENDIX G: CHILD CONSENT FORM.....	227
APPENDIX H: OUTLINE OF <i>BT MANUAL</i> SESSION OBJECTIVES AND GOALS.....	229
APPENDIX I: ADDITIONAL RESULTS.....	233

LIST OF FIGURES

- Figure 8.1.** Changes in parent and child reported child trait anxiety (STAIC-T-P and STAIC-T) across assessment and treatment sessions for CBT participants Eve, Hope and Matt. B1 to B5 = weekly baseline points, 1 to 16 = weekly treatment sessions, PTT = post-treatment, and 3M, 6M and 12M = 3-, 6- and 12-month follow-up assessment points, respectively. 120
- Figure 8.2.** Changes in parent and child reported child trait anxiety (STAIC-T-P and STAIC-T) across assessment and treatment sessions for CBT participants Joy, Ron and Sid. B1 to B8 = weekly baseline points, 1 to 15 = weekly treatment sessions, PTT = post-treatment, and 3M, 6M and 12M = 3-, 6- and 12-month follow-up assessment points, respectively. 121
- Figure 8.3.** Changes in parent and child reported coping skills (mean CQ score for three target complaints across assessment and treatment sessions) for CBT participants Eve, Hope and Matt. B1 to B5 = weekly baseline points, 1 to 16 = weekly treatment sessions, PTT = post-treatment, and 3M, 6M and 12M = 3-, 6- and 12-month follow-up assessment points, respectively. 123
- Figure 8.4.** Changes in parent and child reported coping skills (mean CQ score for three target complaints across assessment and treatment sessions) for CBT participants Joy, Ron and Sid. B1 to B8 = weekly baseline points, 1 to 15 = weekly treatment sessions, PTT = post-treatment, and 3M, 6M and 12M = 3-, 6- and 12-month follow-up assessment points, respectively. 124
- Figure 8.5.** Changes in parent and child reported child trait anxiety (STAIC-T-P and STAIC-T) across assessment and treatment sessions for Carl, Cory and Rose. B1 to B6 = weekly baseline points, 1 to 8 = weekly treatment sessions, PTT = post-treatment, and 3M, 6M and 12M = 3-, 6- and 12-month follow-up assessment points respectively. 138
- Figure 8.6.** Changes in parent and child reported child trait anxiety (STAIC-T-P and STAIC-T) across assessment and treatment sessions for Sam, Bob and Job. B1 to B8 = weekly baseline points, 1 to 8 = weekly treatment sessions, PTT = post-treatment, and 3M, 6M and 12M = 3-, 6- and 12-month follow-up assessment points respectively. 139
- Figure 8.7.** Changes in parent and child reported coping skills (mean CQ score for three target complaints across assessment and treatment sessions) for Carl, Cory and Rose. B1 to B6 = weekly baseline points, 1 to 8 = weekly treatment sessions, PTT = post-treatment, and 3M, 6M and 12M = 3-, 6- and 12-month follow-up assessment points respectively. 140
- Figure 8.8.** Changes in parent and child reported coping skills (mean CQ score for three target complaints across assessment and treatment sessions) for Sam, Bob and Job. B1 to B8 = weekly baseline points, 1 to 8 = weekly treatment sessions, PTT = post-treatment, and 3M, 6M and 12M = 3-, 6- and 12-month follow-up assessment points respectively. 141

LIST OF TABLES

Table 7.1. An overview of CBT and BT participant variables including pre-treatment diagnoses and waitlist periods.....	75
Table 7.2. Participant allocation to CBT or BT and waitlist conditions.	102
Table 8.1. CBT Participants’ Diagnoses Over Time.....	111
Table 8.2. Child Self-Report Scores on Outcome Measures for CBT Condition.	112
Table 8.3. Parent Scores on Measures on Child Outcome Measures for CBT Condition.	117
Table 8.4. Teacher Scores on Measures on Child Outcome Measures for CBT Participants.	118
Table 8.5. CBT Parent Self-Report Scores on Outcome Measures.....	126
Table 8.6. BT Participants’ Diagnoses Over Time	129
Table 8.7. Child Self-Report Scores on Outcome Measures for BT Condition.	133
Table 8.8. Parent Scores on Child Outcome Measures for BT Condition.	135
Table 8.9. Teacher Scores on Measures on Child Outcome Measures for BT Participants.	136
Table 8.10. BT Parent’s Self-Report Scores on Outcome Measures	143
Table 8.11. Analysis of CBT Effects and Maintenance, Showing Degrees of Freedom (<i>df</i>), <i>t</i> -scores, and Effect Size (ES)	148
Table 8.12. Analysis of BT Effects and Maintenance Showing Degrees of Freedom (<i>df</i>), <i>t</i> -scores, and Effect Size (ES).....	149
Table 8.13. Means (M) and Standard Deviations (SD) for Dependent Measures for CBT and BT Treatment Conditions.....	152
Table 8.14. Analysis of Treatment Effects between Treatment Condition and across Time showing Means (M) and Standard Deviations (SD) for Mean Change Scores, Degrees of Freedom (<i>df</i>), <i>t</i> -scores (<i>t</i>) and Effect Sizes (ES).....	154
Table I.1. Child Self-Report Scores on the Fourth Question of the Coping Questionnaire (CQ-C): How much do you think this program will help you feel less upset?	233

Table I.2. Parent Reported Scores on the Fourth Question of the Coping Questionnaire (CQ-P): How much do you think this program has helped your child to feel less upset?	233
Table I.3. Mean CBT and BT Child's Perception of Therapeutic Relationship (CPTR) scores following treatment	234
Table I.4 CBT and BT Child and Parent Recall of Content Questionnaire (RCQ) responses to open-ended questions regarding treatment at post-treatment and 12-month follow-up.....	235

CHAPTER 1

INTRODUCTION

Stress has frequently been related to negative outcomes including poor health, reduced motivation, and depression (Coddington, 1972; Vogel & Vernberg, 1993). It has been suggested that excessive stress, and its physical and psychological manifestations result in up to 80%, or more, of all health care professional visitations (Cummings & Vanden Bos, 1981, cited in Everly & Lating, 1995). A primary stress response is anxiety-based. Anxiety, like most stress responding, can be adaptive or dysfunctional. Characteristic features include autonomic symptoms (e.g., heart palpitations, perspiration and stomachache) behavioural avoidance and self-talk related to apprehension (Kendall, Chansky et al., 1992).

Normal anxiety serves a healthy and adaptive purpose. Ethological perspectives posit that normal anxiety responding has survival enhancing qualities. For example, a baby's fearful responding to loud noises and strangers can alert caregivers of approaching danger. The need for protection encourages the development of resources that will reduce potential threat or harm (Ronan, 1996). Additionally, anxiety helps aid the process of children assimilating within a world of others. That is, certain amounts of anxiety perform a regulatory role for children's (and adult's) behaviour, helping them monitor their behaviour in a world with cultural, social, and academic expectations.

A deficit or excess of anxiety may result in maladaptive functioning. One group of children with inadequate levels of anxious arousal may be those who demonstrate antisocial and conduct-related problems (e.g., callous unemotionality, Frick, O'Brien, Wootton, & McBurnett, 1994; Kendall & Hammen, 1995). On the other hand, children with extreme levels of anxiety may be disadvantaged by an inability to carry out, or by avoiding normal daily tasks. For example, a child with separation anxiety may be too fearful to go to school or play with peers outside of the 'feared for' person's presence.

Knowledge of how normal and excessive childhood anxiety has historically been categorised, assessed and treated is important for an understanding of how childhood

anxiety is viewed today. Additionally, understanding maladaptive anxiety first requires knowledge about what is normal. The following sections define fear and anxiety, review normative data, maladaptive anxiety, and provide an initial overview of diagnosis, assessment and treatment.

Definitions

The constructs fear and anxiety tend to be used as synonyms (Morris & Kratochwill, 1983). As working constructs, however, differences do exist. Fear is generally regarded as a discriminative emotional response to a *specific* stimulus involving physiological arousal (e.g., palpitations, perspiration, headache and stomachache), cognitive distress, and behavioural avoidance. Fear is generally thought initially to be a normal response to a genuine threat. A phobia is a maladaptive fear that is *persistent* and *irrational* and is elicited by a specific stimulus or situation. Anxiety involves similar patterns of physiological, cognitive and behavioural responding. However, responding is triggered by *anticipated* danger – a response to a perceived threat (internal or external). Anxiety may be focused on situations, activities or objects that are to be avoided, or it may be unfocused, without a specific cause (American Psychiatric Association, 1994). Anxiety then is distinguished from fear in that the response is seen as future oriented with more of an internal focus of emotions (Chaplin, 1985; Kendall & Ronan, 1990).

Viewing fears and anxiety as separate constructs has limited clinical or research use (Kendall & Ronan, 1990; Morris & Kratochwill, 1983). While differences exist between the two constructs, there is little evidence to support physiological, cognitive, and behavioural differences (Husain & Kashani, 1992). The two constructs have similar organising themes, including thoughts of impending danger or uncertainty and a state of apprehension. Clinical literature often refers to the two terms interchangeably (Kendall & Ronan, 1990; Morris & Kratochwill, 1983).

Normative Data

The experience of fear and anxiety are universal phenomena, they are a normal part of development. The content of childhood fears and anxieties are related to the developmental level of the child. With increased age, the content of fears alters in a

sequential fashion related to cognitive development (King, 1993; Ronan & Deane, 1998). Children progress from fears that are externally-based and concrete in nature to anxieties that are increasingly internally-based, abstract, and future-focused (Kendall & Ronan, 1990; King, 1993). Typically, children aged 0- to 6-months fear a loss of parental support and loud noises. Children aged 7- to 12-months typically fear strangers and sudden or unexpected looming objects. Children at age 1- to 4-years tend to fear strangers, separation from parents, loud noises, animals (e.g., large dogs), the dark, masks, and injury. Children aged 5- to 6-years typically fear separation from parents, “bad” people, the dark, injury, and supernatural beings. Children aged 7- to 8-years tend to fear the dark, supernatural beings, staying alone, and injury. Children aged 9- to 12-years tend to fear injury, tests, school evaluation, and social evaluation. During adolescence, fears and anxieties tend to focus on moral, peer, identity, and sexual issues (Morris & Kratochwill, 1983).

Further, while some fears are transient and age-related, research (Ollendick, 1983; Ollendick, Matson, & Helsel, 1985) has found others to be relatively stable in nature. Eight out of the ten ‘most feared’ objects and situations by children remain the same for children between 7- and 18-years. These fears relate to perceived threats to survival and include: being struck by a vehicle, not being able to breathe, bombing attacks, fire – being burnt to death, earthquakes, falling from a high place, one’s home being broken into, and death. With regard to the other two fears, 7- to 10-year olds feared being asked to see the school principal and getting lost in a strange place; children over 10-years, obtaining poor grades or failing a test (Ollendick, 1983). That is, younger children tend to experience fears related to punishment and separation, while older children and adolescents tend to experience fears that are more social and evaluative in nature (King, 1993). Thus, while the majority of major childhood fears appear to be ‘universal’ and survival oriented, other fears are more related to developmental tasks.

In terms of gender differences, girls fear prevalence rates have consistently been shown to be higher than boys (e.g., Bernstein, Borchardt, & Perwien, 1996; Ollendick & King, 1991). One explanation is sex-role stereotyping. That is, within our culture, the disclosure of fears may differ depending on one’s gender. It simply may be more acceptable for girls to express fears. On the other hand, boys may be expected to be more fearless. As a result, parents may be less inclined to label or perceive boys’

behaviour as fearful and anxious (Kendall & Ronan, 1990; King, 1993). Thus, while actual gender differences may exist, a reporting bias may also exist. Despite gender differences in prevalence rates, both genders experience fear to similar stimuli (King, Ollier, Iacuone, Schuster, Bays, Gullone et al., 1989; Ollendick, King, & Frary, 1989).

Other factors that may effect the number and intensity of children's fears and anxiety include culture, urbanisation, and socio-economic status (SES). While findings regarding ethnicity and geographical location are mixed, overall findings show that regardless of culture or geographical location, children tend to report similar types and numbers of fears (see Fonseca, Yule, & Erol, 1994 for a review). Preliminary research investigating the effects of SES has found the nature and number of children's fears may differ. For example, the Fonseca et al. (1994) literature review found children from English speaking countries, and from lower SES groups reported fears related to violence, rats and cockroaches while children from the higher SES groups reported fears related to accidents, dangerous animals, and poisonous insects. Further, children from lower SES groups reported fewer fears than did the children from higher SES groups.

Maladaptive Fears and Anxieties

While many children's fears and anxieties are normal and serve an adaptive function, extreme levels of anxiety are often maladaptive. Anxious responding is considered maladaptive when the intensity or duration increase to levels which lead to significant distress or impairment in a child's normal daily routine (American Psychiatric Association, 1994: DSM-IV). For example, a 12-year old may suffer an embarrassing incident on the school playground and temporarily find playtimes anxiety provoking. Such a response to playtimes represents normal responding. However, if over an extended timeframe, the child avoided school playtime and play with friends in general, the behaviour would be more likely to be considered maladaptive. Continued or over-generalised avoidance and related symptoms can start to impair functioning.

Without intervention, anxiety symptoms may worsen for some children and continue into adulthood. Research has consistently found that anxiety for some children can be severe, persistent, and associated with long-term impairment continuing into adulthood (Brent, Kalas, Edelbrock, Costello, Dulcan & Conover, 1986, Last, Hersen, Kazdin,

Finkelstein & Strauss, 1987, and Last, Hersen & Kazdin, 1988, cited in Strauss, 1993). For example, Pallack, Otto, Sabatino, & Majcher's (1996) retrospective study of 194 adults with panic disorder found 54% had a history of childhood anxiety disorders. Further, those with a history of a childhood anxiety disorder were more likely to have a comorbid anxiety disorder as an adult than those not reporting childhood anxiety problems.

Diagnosis

The Diagnostic and Statistical Manual (DSM: American Psychiatric Association, 1952; 1968; 1980; 1987; 1994; 2000) is the most commonly used psychopathology classification system both overseas (Kaplan, Sadock, & Grebb, 1994) and in New Zealand. Given this, the DSM diagnostic criteria will be the focus of this section, rather than alternative classifications systems (e.g., the International Classification of Diseases and Related Health Problems - ICD: World Health Organisation, 1996).

Historically, the bases of the DSM system evolved from clinical observations and intuition. It was neither theoretically or empirically grounded (Spence, 1997).

However, as each successive version of the DSM was developed, empirical evidence has increasingly been taken into consideration (Carson, 1991). Initially, the DSM used the same diagnostic criteria for childhood anxiety as that used for adults. DSM-I (American Psychiatric Association, 1952) did not refer to anxiety disorders in children at all. DSM-II (American Psychiatric Association, 1968) incorporated one condition under behaviour disorders, "overanxious reaction of childhood and adolescence." The three adult anxiety disorders (anxiety reaction, phobic reaction, and obsessive-compulsive reaction) could also be applied to children. By DSM-III and DSM-III-R (American Psychiatric Association, 1980; 1987), there were descriptions of three categories specific to children and adolescents: separation anxiety disorder, avoidant anxiety disorder, and overanxious disorder (Husain & Kashani, 1992).

Despite this apparent progression towards diagnosis and classification becoming more childhood specific, a more recent revision of the DSM has seen a reversal of this trend (DSM-IV: American Psychological Association, 1994); the most recent revision has preserved these changes (DSM-IV-TR: American Psychological Association, 2000).

DSM-IV (American Psychiatric Association, 1994) and, now DSM-IV-TR, saw two of the three childhood specific disorders from DSM-III-R incorporated within more general categories. Overanxious disorder is now subsumed under generalised anxiety disorder; avoidant disorder, under social phobia. Of the eight primary anxiety diagnoses applicable to children (i.e., panic disorder, specific phobia, social anxiety disorder/social phobia, obsessive-compulsive disorder, post-traumatic stress disorder, acute stress disorder, generalised anxiety disorder, and separation anxiety disorder), only separation anxiety disorder remains childhood specific. Panic disorder and acute stress disorder do not include childhood specific features. The remaining anxiety diagnostic categories (specific phobia, social phobia, obsessive compulsive disorder, post-traumatic stress disorder, and generalised anxiety disorder) do allow for some childhood specific features of anxiety expression.

The anxiety disorders allowing childhood specific expression do not require children to show as many symptoms as adults and or allow anxiety to be expressed in a different form (American Psychological Association, 2000). Specific and social phobia disorders take into consideration the often transient nature of children's fears. Both require that the phobia be present in children under the age of 18-years for a minimum of six months (versus no specified timeframe for adults), do not require children to recognise that the phobia is excessive or unreasonable, and allow for anxiety to be expressed by crying, tantrums, freezing, or clinging. Additionally, specific phobia does not require children to report distress about the phobia. Social phobia requires that children have the ability to engage in age-appropriate social relationships with familiar people, and that social anxiety not be limited to adult interactions. Further, as children are often unable to avoid social situations, avoidance may be expressed as shrinking away from social situations that involve unfamiliar people. Obsessive compulsive disorder does not require children to recognise that their obsessions or compulsions are excessive or unreasonable. Post-traumatic stress disorder recognises and allows for developmental differences. Children may express recurrent distressing dreams as frightening dreams with no recognisable content. Younger children may express recurrent and intrusive memories as repetitive play expressing a theme of the trauma, and the feeling that the event is or may happen as trauma-specific re-enactments. Finally, generalised anxiety disorder only requires children to experience one of six symptoms (restlessness, fatigue,

difficulty concentrating, irritability, muscle tension, sleep difficulties), whereas adults must experience three or more (American Psychiatric Association, 1994).

Potential developmental differences exist for the anxiety disorders. Some types of maladaptive anxiety experienced by children tend to be related to age. Diagnoses of separation anxiety and simple phobia disorders tend to be more common among younger children, while older children tend to receive diagnoses of social phobia and generalised anxiety (see review by Ollendick & King, 1994). Diagnosis and the specific disorders are discussed in more detail in Chapter 2.

Assessment

As seen through the history of the diagnosis of childhood anxiety, children and adolescents were seen more often in the past as ‘miniature adults’ (Ollendick & Hersen, 1993). Psychopathological understanding and classification systems have often been based on knowledge acquired from adult disorders – assessment, diagnosis, and treatment all adapted from adult-based data. This trend has been particularly obvious for anxiety disorders. For example, instruments habitually used for childhood assessment have been adapted versions of adult anxiety instruments (e.g., Manifest Anxiety Scale - Children's Manifest Anxiety Scale, Fear Survey Schedule - Fear Survey Schedule for Children, State-Trait Anxiety Inventory - State-Trait Anxiety Inventory for Children: Castaneda, McCandless, & Palermo, 1956; Ollendick, 1983; Spielberger, 1973, respectively).

The use of formalised treatments paralleled theoretical developments. However, the development of assessment instruments was delayed in comparison. For example, while behavioural theories of anxiety and treatment had been present since the early 1900's (Jones, 1924; Watson & Rayner, 1920), the development of formalised behavioural assessment techniques did not occur until the 1970's. Once developed, the application of behavioural assessment techniques and related principles, established an empirical, functional approach to assessment (e.g., Bijou & Peterson, 1971 and Ollendick & Hersen, 1984 cited in Ollendick & Hersen, 1993). However, due to initial conceptions of children as adult counterparts, normative and developmental data was not considered within the assessment process early on (Ollendick & Hersen, 1993).

Deficits in knowledge regarding normal developmental processes meant that children were being compared with adults, rather than with more appropriate reference groups (Ollendick & Hersen, 1993).

As with the development of more precise behavioural assessment, the 1970's saw too the growth of developmental perspectives. This focus resulted in an increased understanding of the assessment and treatment of children within a developmental context (Ollendick & Hersen, 1993). For example, children began to be compared with age appropriate reference groups. Alongside behaviourally- and developmentally-based considerations, there was an increased focus on the role of cognition (Kendall & Ronan, 1990). The integration of a cognitive model and research also resulted in potentially a richer assessment. As a consequence of increasingly integrated perspectives, multimodal assessment techniques (e.g., behavioural observations, self-reported thoughts and feelings, and clinical interviews) were, and continue to be, frequently used to assess children's anxiety (Kendall & Ronan, 1990; Ollendick & Hersen, 1993).

Multimodal assessment techniques help counter the fact that no single assessment approach of childhood disorders is able to fully assess anxiety (Kendall, Chansky, Friedman, Kim, Kortlander, Sessa et al., 1991). Moreover, a multimodal approach, whereby multiple techniques are used to assess multiple settings and sources is said to be necessary for several reasons (Kendall, Pellegrini, & Urbain, 1981, cited in Kendall et al., 1991): Multimodal assessment provides more than diagnostic information, it serves a functional purpose, providing information that can be useful for children and parents as well as guide treatment programmes (Kendall et al., 1991; Morris & Kratochwill, 1983). Assessment techniques and targets are discussed in more detail in Chapter 4.

Treatment

Initially, any demonstrated problems experienced by children were seen to be able to benefit from similar reasoned advice provided to adults (Husain & Kashani, 1992). Therapists traditionally looked to the adult anxiety literature for guidance (Kendall et al., 1991). For example, behaviour therapies found effective in treating generalised

anxiety disorder in adults have also been used with anxious children (Barrios & Shigetomi, 1979, cited in Kendall et al., 1991).

However, since the 1980's, more developmentally sensitive approaches have been developed. For example, treatment utilising developmentally appropriate cognitive and behavioural techniques (e.g., Barrett, Dadds, & Rapee, 1996; Kane & Kendall, 1989; Kendall, 1994) have been found to be effective for anxiety disordered children. The treatment of childhood anxiety problems is discussed in Chapter 5.

Summary

In summary, while some childhood fears and anxieties serve an adaptive role, others do not. For children who experience increased levels of anxiety, a lack of intervention may result in continued or increased impairment. As a consequence of the growth of developmental theories and research, the assessment and treatment of childhood anxiety problems has become more child-focused. Chapters 2 through to 5 elaborate on the specific anxiety disorders, diagnostic issues (Chapter 2), etiological theories (Chapter 3), assessment (Chapter 4), and treatment (Chapter 5). Chapter 6 then gives an overview of the current study. Chapter 7 and 8 present the methods and results, respectively. Chapter 9 presents the discussion.

CHAPTER 2

ANXIETY DISORDERS AND STRUCTURE

This chapter is divided into two main parts. The first section overviews the characteristic features of each of the anxiety disorders (according to DSM-IV-TR), including prevalence and comorbidity rates. The second section reviews the structure of anxiety within the context of DSM. Research regarding the validity of anxiety as a distinct construct is presented.

Diagnoses and Classification

The DSM-IV-TR (American Psychiatric Association, 2000) Axis 1 clusters affective, behavioural, cognitive and physiological psychopathology symptoms together to create clinical disorders, that are intended to be clearly identifiable and separate from each other. While anxiety symptoms are said to be present in all DSM-IV-TR disorders, anxiety disorders are distinctive in that anxiety is the *primary* clinical feature (Husain & Kashani, 1992). The DSM definition of anxiety is as follows:

“The apprehensive anticipation of future danger or misfortune accompanied by feelings of dysphoria or somatic symptoms of tension. The focus of anticipated danger may be internal or external” (American Psychiatric Association, 1994, p. 764).

The DSM-IV-TR (2000) classifies anxiety disorders as follows: phobia (social and specific), panic disorder, obsessive-compulsive disorder, traumatic stress (posttraumatic stress disorder and acute stress disorder), generalised anxiety disorder, and specific to childhood, separation anxiety disorder. With the exception of separation anxiety disorder, DSM-IV-TR diagnoses of anxiety disorders in children are conducted under the same general guidelines employed for adults. However, as discussed DSM-IV-TR does incorporate specific features related to childhood expression of symptoms (e.g. a greater peer-focus, and a decreased number of necessary symptoms). To qualify for a diagnosis, children (and adults) need to express symptoms that cause significant distress or impairment to one’s regular daily functioning (American Psychiatric Association, 2000). A brief overview of characteristic features of each of the four DSM-IV-TR

anxiety disorders more commonly found in children (i.e., social phobia, specific phobia, generalised anxiety, and separation anxiety: Ollendick & King, 1994) is now presented (for the other disorders, see Appendix A). Following this, overall prevalence and comorbidity rates are presented.

Specific Anxiety Disorders

Social Phobia (SP) is defined by an enduring, overwhelming fear of performance or of social situations in which the child is exposed to people who are unfamiliar or where assessment by others is possible, and the fear that one may somehow humiliate or embarrass one self. Additionally, exposure to social situations often results in avoidance behaviour. DSM-IV-TR also includes as a child-specific symptom, extreme shrinking from people with whom the child is unfamiliar (American Psychiatric Association, 2000). This symptom was previously incorporated within avoidant disorder of childhood (DSM-III-R).

Specific Phobia (SpP) is characterised by excessive, persistent fears of possible circumstances or objects unrelated to fears included within social phobia (e.g., fear of public embarrassment). Objects or circumstances are endured with extreme distress, often resulting in avoidance behaviours. Children may express their fear via freezing, clinging, crying, or tantrums. For a diagnosis to be made, symptoms need to occur for six months or longer. Common phobias of childhood include fear of heights, loud noises, darkness, small animals, and illness (Merckelbach, de Jong, Muris, & van den Hout, 1996) as well as others discussed in Chapter 1.

Generalised Anxiety Disorder (GAD) is characterised by excessive unmanageable worry (apprehensive expectations) about many events occurring most days for a minimum of six months. In addition, a childhood diagnosis of GAD requires that during times of anxiety, one of six hyperarousal symptoms is present. Children with GAD often experience excessive worry about the quality of their performance or about their ability (American Psychiatric Association, 2000).

Separation Anxiety Disorder (SAD) is the only childhood specific anxiety disorder within DSM-IV-TR. SAD is characterised by maladaptive anxiety, exceeding one's developmental level, concerning separation from the home or from persons the child is

emotionally attached. Diagnosis of SAD requires children to show at least three related symptoms (e.g., worry about possible harm to significant others, an inability to be alone, avoidance of places away from home, school avoidance, nightmares revolving around separation, reoccurring somatic complaints). Symptoms need to occur for a minimum of four weeks. SAD is one of the most prevalent anxiety disorders in children prior to adolescence (Albano & Chorpita, 1995).

Prevalence and Comorbidity

Anxiety disorders are reported to be one of the most common childhood psychiatric disorders (Bernstein & Borchardt, 1991). Using a conservative criterion of functional impairment requiring intervention, approximately 10% of children, both nationally and internationally, suffer from anxiety disorders (Bernstein & Borchardt, 1991; McGee, Feehan, Williams, Partridge, Silva, & Kelly, 1990). Prevalence rates (based on DSM-III) are reported to range from 2.3% to 9.0% for phobias, 2.6% to 5.9% for overanxious disorder (subsumed under GAD within DSM-IV), and 2.0% to 5.5% for SAD (Anderson, 1994).

Notably, multiple studies have found one third or more of anxiety disordered children meet criteria for at least one additional anxiety disorder (see AACAP, 1997). Further, anxiety disorders are frequently comorbid with other psychological disorders, including externalising, and to a greater extent, mood disorders (Kendall, 1994; McGee et al., 1990; Ollendick & King, 1994). For example, Kendall's (1994) treatment outcome study for anxiety disordered children found 15% comorbid with Attention Deficit Hyperactivity Disorder (ADHD); 13%, oppositional defiant disorder; and 32%, depression. Brady and Kendall's (1992) review of the anxiety-depression literature found 15.9% to 61.9% of children with anxiety disorders were comorbid with depressive disorders. Similar comorbidity rates have also been found in general populations (see Anderson, 1994). These findings are similar to those in adult populations (e.g., Watson, Clark, & Carey, 1988).

Both anxiety disorders and associated comorbid disorders show trends across different age groups. For example, younger children tend to be diagnosed with separation anxiety and simple phobia and these diagnoses are occasionally comorbid with ADHD

(Ollendick & King, 1994). Older children have higher prevalence rates for social phobia and GAD and are more often comorbid with depression and dysthymia (see review by Ollendick & King, 1994).

Anxiety disorders have also been associated with gender differences, though findings are mixed. Numerous studies have found no gender differences in children who manifest anxiety disorder (Silverman & Nelles, 1988; Strauss, 1993). For example, Treadwell, Flannery-Schroeder, and Kendall (1995), in their study of 178 clinic referred children, found similar prevalence rates for boys and girls. However, numerous community-based studies have found higher prevalence rates for girls than boys. For example, Lewinsohn, Gotlib, Lewinsohn, Seeley, and Allen (1998) in their study of 1,079 adolescents found 74% of the “current cases” and 65% of “recovered cases” were females; no gender differences were noted in the “no-disorder” group (48% female). Similar findings have been observed within New Zealand samples. For example, Ferguson, Horwood, and Lynskey (1993), in their Christchurch Health and Development study, found girls had 2.5 and 4 times the rate of anxiety and mood disorders compared to boys.

Anxiety Structure

As mentioned in the previous section, the structure of anxiety disorders is said to be distinct from other disorders in that anxiety is the primary clinical feature (Husain & Kashani, 1992). However, the high level of comorbidity between anxiety and depression and between anxiety subcategories has raised concerns as to the validity of the general and specific structure of anxiety. It has been suggested (Achenbach, 1991a) that comorbidity rates reflect the possibility that symptoms do not cluster in the manner assumed by DSM, and that no clear distinction between anxiety and mood disorders exists for youth. This section provides an overview of the literature: (a) for anxiety as a construct distinct from depression and (b) for the specific nature of anxiety subcategories.

Notably, adequate validity has been provided for a general construct underlying the anxiety disorders. Multiple studies (Chorpita, Plummer, & Moffitt, 2000; Cloninger, 1986; Eysenck, 1967; Grey, 1982) support the notion that anxiety, in the first instance,

may be subsumed within the context of a more general factor. While the names used to qualify this general factor vary (e.g., neuroticism and general psychological distress: Brady & Kendall, 1992; Lonigan, Carey, & Finch, 1994), they all tend to be umbrella terms covering a similar broad factor. For the purposes of this chapter, the term *negative affect* (Watson & Clark, 1984) will be used. Negative affect (NA) refers to non-specific distress, encompassing moods such as guilt, fear, sadness and anger (Watson & Clark, 1984; Watson et al., 1988). Characteristic features of NA include a tendency to worry, feel anxious, and have a tendency towards dysfunctional beliefs, a negative attributional style, and negative self-referent cognitions (Clark & Watson, 1991).

Negative affect has been found to be an underlying factor in childhood anxiety (Chorpita, Albano, & Barlow, 1998; Chorpita et al., 2000; Muris, Schmidt, Merckelbach, & Schouten, 2001; Spence, Rapee, McDonald, & Ingram, 2001). For example, Spences' (1997) study of two community samples of 698 children (aged 8 to 12-years) investigated the degree to which anxiety symptoms cluster. Using a self-report questionnaire children rated the frequency with which they experienced a wide range of anxiety symptoms. Confirmatory factor analysis of children's responses found discrete but correlated factors associated with DSM-IV anxiety disorder subcategories best fit the results. Results identified a higher-order, general factor (NA) that accounted for the correlation between factors and specific anxiety disorder features. Findings have been replicated across multiple age groups (e.g., 3- to 6-years: Muris et al., 2001; 12- to 18-years: Spence et al., 2001). These findings are similar to those from adult research (e.g., Tellegen, 1985; Watson & Clark, 1984; Zinbarg & Barlow, 1996).

Negative affect is also a factor found to underlie depression (Brown, Chorpita, & Barlow, 1998; Chorpita et al., 2000; Cole, Truglio, & Peeke, 1997; Joiner, 1996). That is, the two constructs (anxiety and depression) appear to overlap. Despite this shared relationship, research indicates that they are different constructs (e.g., Chorpita, Albano et al., 1998; Clark, Steer, & Beck, 1994; Joiner, Catanzaro, & Laurent, 1996; Watson, Clark, Weber, Assenheimer, Strauss, & McCormick, 1995). A model used to explain the relationship between the two constructs, while also differentiating them, is Clark and Watson's (1991) tripartite model.

Clark and Watson's (1991) tripartite model posits that anxiety and depression symptoms are divided into three groups: negative affect (NA), physiological hyperarousal (PH) and (low) positive affect (PA). In line with previous NA literature, Clark and Watson propose that NA constitutes a common, higher order factor, typical of both anxiety and depression. Of the other two factors, PH refers to symptoms of somatic tension and hyperarousal (e.g., headache, dry mouth, trembling). Positive affect refers to the tendency to engage in enjoyable activities. Positive affect involves factors of well-being, affiliation, energy and social competence (Clark et al., 1994; Clark & Watson, 1991). It is these latter two factors that may be used to differentiate anxiety and depression. Specifically, PH factors are said to be relatively specific to anxiety and low PA factors, specific to depression (Clark et al., 1994; Clark & Watson, 1991; see also Ronan, Kendall, & Rowe, 1994).

Numerous studies support a tripartite perspective of anxiety and depression for children (e.g., Chorpita, Albano et al., 1998; Clark et al., 1994; Joiner et al., 1996; Watson et al., 1995) and adults (Clark et al., 1994; Joiner, 1996; Watson et al., 1995). For example, Chorpita and colleagues (1998) study of 216 clinically referred children (aged 6- to 17-years) diagnosed with anxiety and or depression investigated latent factors associated with the two diagnostic categories. Confirmatory factor analysis of parent- and child-reports found the two constructs (anxiety and depression) were distinct, yet correlated. The results supported the correspondence between anxiety and NA, between depression and low PA, and between fear and PH. Further, childhood anxiety was differentiated from depression via symptoms of PH; depression distinguished from anxiety via low PA symptoms (Chorpita, Albano et al., 1998; see also Joiner et al., 1996; Lonigan et al., 1994). Thus, NA and tripartite literature provides support for anxiety as a distinct construct. Findings also provide a reasonable explanation for high comorbidity rates among anxiety disorders and between anxiety and depression.

Further, support has been provided for anxiety subcategories, establishing distinguishable key features (e.g., Brown et al., 1998; Spence, 1997; Spence et al., 2001; Zinbarg & Barlow, 1996). Adult and childhood subcategory features are similar. For example, Zinbarg and Barlow (1996) identified distinguishable categories for adults: social phobia, fear of fear, agoraphobia, simple phobia, and obsessive-compulsions. Similarly, Spences' (1997) analysis of anxiety features for children identified discrete,

but correlated categories: panic-agoraphobia, social phobia, separation anxiety, obsessive-compulsions, generalised anxiety, and physical fears. Further, both adult and child studies have found that factor models utilising DSM-based phenomenological categories best fit the data. Thus, research also provides construct validity for the specific nature of a number of anxiety disorders.

While there has been considerable support for anxiety as a separate construct with disorder specific subcategories, such research has been criticised for methodological limitations (Carson, 1991). Of primary concern has been that the research has used methods that are potentially self-fulfilling in nature (Carson, 1991). This criticism is somewhat true in that many of the studies have used a confirmatory analytic strategy with samples, diagnosed with DSM anxiety criteria. However, recent studies using a more general population sampling strategy and or exploratory analyses have also supported the notion of a distinct construct with differential features (Brown et al., 1998; Brown, Di Nardo, Lehman, & Campbell, 2001; Spence, 1997; Spence et al., 2001).

Further, it should be noted that while considerable support for a tripartite model exists, support for other models also exists. For example, there has been support for a unitary model of anxiety for younger children (e.g., Cole et al., 1997). A unitary model views anxiety and depression as part of a single mood disorder with anxiety and depression seen to be two variants within it. Cole et al.'s (1997) study of 280 third-graders and 211 sixth-graders found that the underlying constructs of anxiety and depression were virtually indistinguishable for younger children. Results for older children were consistent with the tripartite model. While other conceptual- and factor-focused studies have not reported age-related differences for children (e.g., Chorpita, Albano et al., 1998; Joiner et al., 1996; Watson et al., 1995), these studies have also not analysed by age. Further research is needed to investigate potential developmental differences.

Summary

The DSM (1980, 1987, 1994, 2000) classification system categorises anxiety into six principal subcategories applicable to children. Support for the categorisation of anxiety disorders, and for anxiety as a construct distinct from depression has been provided via

research focused on NA, PH, and PA. Negative affect has been found to explain the comorbidity between anxiety disorders and between anxiety and depression. While alternative views of anxiety structure exist (e.g., unitary), reasonable support for anxiety as a distinct construct and the current system for categorising anxiety disorders has been provided, particularly for older children.

CHAPTER 3

COGNITIVE AND BEHAVIOURAL THEORIES OF CHILDHOOD ANXIETY

This chapter provides a review of cognitive and behavioural theories of childhood anxiety. While other theories exist (e.g., psychoanalytic, emotion-focused), they are not included in this review. The principal reasons for a focused, rather than broad review are twofold. First, the focus of the current research is cognitive and behavioural; second, the majority of treatment research for anxious children has focused on treatment with underlying cognitive and/or behavioural bases (Clark, 2001; Southam-Gerow, Henin, Chu, Marrs, & Kendall, 1997). Behavioural theories are first presented followed by cognitive and cognitive-behavioural theories.

Behavioural Theories

Behavioural models of anxiety posit that children's fears and phobias are learned responses to environmental stimuli. Behavioural theories received considerable attention and support following Watson and Raynor's (1920) study of fear induction in Little Albert using conditioning techniques and Jones' (1924) exposure-based treatment of Peter, a three-year-old with a fear of furry animals. This section provides a review of four behavioural theories of childhood anxieties: classical conditioning, operant conditioning, a two-factor model, and modelling.

Classical/Respondent Conditioning

Classical conditioning is based on the idea that certain stimuli elicit certain instinctive behaviours (Martin & Pear, 1992). That is, stimuli elicit responses independent of previous learning experiences. Stimuli that elicit such respondent behaviour are called unconditioned stimuli (UCS) and the respondent behaviour, an unconditioned response (UCR). For example, an infant's startle response (UCR) to loud noises (UCS) is a biologically-based stimulus response. Classical conditioning occurs when an UCS is paired with a neutral stimulus (NS) resulting in the previously neutral stimulus eliciting a conditioned response (CR). The previously neutral stimulus then becomes the conditioned stimulus (CS) and the response to this stimulus, a CR. Usually conditioning

requires several pairings of the NS and the UCS, and the CR to be similar to, but not identical to the UCR. Stimulus generalisation is said to occur when stimuli similar to the original CS elicit the CR without any explicit pairing with the UCS. Extinction is said to occur if the CS is presented continually without the UCS. Typically this results in the CS no longer eliciting the CR (Martin & Pear, 1992).

A classical conditioning theory of childhood anxiety assumes that anxiety problems (CR) stem from traumatic experiences (UCS), which elicit an initial fear response (or UCR). That is, fear becomes a CR as a result of neutral events being paired with noxious or traumatic events (UCS). Classical conditioning received considerable attention following Watson and Raynor's (1920) study of "little Albert" (an 11-month old boy). Watson and Raynor paired a loud noise (UCS) that elicited fearful responding (UCR) with objects that previously did not elicit fearful responding (NS). The experiment involved simultaneously striking a steel bar (UCS) and presenting Albert with a white rat (NS) on several occasions. This resulted in a CR to the white rat alone (now a CS). Five days later, Albert's conditioned fearful response continued. Albert's negative responding generalised to similar objects including a fur coat, a white rabbit, cotton wool and the experimenter's grey hair. This phenomenon is referred to as stimulus generalisation.

Similarly, Jones (1931) found support for the conditioned acquisition of anxiety in children. Jones' study found that by pairing a bell with a small electric shock, he was able to condition fearful responding to the bell alone in a 15-month old boy (Robert B.). As with Watson and Raynor's (1920) study, Jones (1931) noted stimulus generalisation occurred, specifically Robert's fearful responding generalised to a buzzer.

Research supporting classical conditioning has been either laboratory based or retrospective (King, Hamilton, & Ollendick, 1988). However, tracking the origins of fears in everyday life is difficult. Even with retrospective research, the onset of fears cannot always be followed back to an aversive or traumatic event (King et al., 1988). For example, only around 50% of phobic clients attribute their anxiety to trauma or conditioning (Herbert, 1994). Further, children often fail to acquire fear in what are commonly recognised as fear evoking situations. For example, there are no significant differences between self-reported anxiety for Israeli children in frequently bombed areas

compared to children from peaceful areas (Ziv & Israeli, 1973 cited in King et al., 1988).

One explanation for children not acquiring anxiety symptoms as a result of respondent conditioning is that all stimuli do not have equal ability to induce fear (King et al., 1988). For example, attempts to condition fearful responding towards wooden objects or curtains in children have been unsuccessful (e.g., Bergman, 1934 and Valentine, 1946, cited in King et al., 1988). By contrast, attempts to condition responding towards snakes and spiders have been successful (Ohman & Soares, 1998). A possible reason for differences in fear acquisition may lie within Seligman's (1971) biological preparedness theory. This model posits that biologically prepared stimuli (e.g., spiders) are more likely to be feared than non-biologically prepared stimuli (e.g., curtains). Other theories that take into account factors beyond traumatic learning experiences are next discussed.

Operant Conditioning

Operant conditioning, a term first used by Skinner (1938) is based on the principle that consequences of a behaviour can alter the rate of that behaviour. Operant conditioning models often focus on approach and avoidance behaviours, and environmental factors that maintain and reduce those behaviours (reinforcement and punishment, respectively). It is posited that reinforced behaviour will recur but behaviour that is not reinforced or is punished will not recur (Martin & Pear, 1992). Further, this theory holds that behaviour may be gradually modified or *shaped* as a result of reinforcement. A salient point of operant conditioning is that it is reward focused – environments that provide the most reward are approached whilst aversive environments are avoided (King et al., 1988; Martin & Pear, 1992).

Operant conditioning models posit that anxiety responding is anticipatory in nature with events and environmental factors cueing anxiety, which in turn motivates behaviours of an avoidance or escape type (King et al., 1988). If successful, these behaviours reduce anxiety and strengthen avoidance and escape behaviours. For example, take the case of a child who cries and behaves in a generally distressed manner on arrival at school, and is then sent home. According to the model, in similar, future circumstances the child may then repeat the behaviour (crying) in the anticipation that it will result in being sent

home. Such behaviour may then reduce anxiety temporarily and reinforce the initial behaviour (King et al., 1988).

Operant conditioning models of anxiety also posit that fear acquisition in children may be taught or strengthened via the reinforcing responses of others (King et al., 1988; Miller, Barrett, & Hampe, 1974). That is, parents or teachers who attend to fearful, avoidant or cautious responding with reassurance, affection, or anger may inadvertently reinforce the behaviour. Children may then learn that significant others are sensitive to such responding and anticipate that it will result in increased attention (King et al., 1988; Miller et al., 1974). For example, a child may avoid the school environment to stay in the more reinforcing environment of the home. Alternatively, a child may try to stay at home because school is aversive (i.e., associated with punishing consequences). Parents who allow such behaviour may unwittingly reinforce these behaviours (Miller et al., 1974).

With regards to the role of operant conditioning in children's maintenance of fearful responding, research has found strong support for the impact of significant others, particularly family (e.g., Barrett, Rapee, Dadds, & Ryan, 1996; Dadds, Barrett, Rapee, & Ryan, 1996; Shortt, Barrett, & Fox, 2001; Siqueland, Kendall, & Steinberg, 1996). For example, Barrett et al.'s (1996) clinical observations of children (aged 7 to 14 years) and their parents when presented with ambiguous situations were that anxious children's family discussions resulted in increased threat interpretations compared to observations of non-anxious children and their parents. Parents of anxious children were found to reinforce an avoidant-anxious response style in their children more than parents of controls did. For example, Dadd et al.'s (1996) study found that parents of non-anxious children were more likely to listen to and be in agreement with pro-social strategies, whereas parents of anxious children were more likely to reinforce avoidant responding. The parents of anxious children seem to encourage caution and risk avoidance by reinforcing avoidant responding.

In summary, operant conditioning provides a further explanation for the development and maintenance of fearful responding. However, this theory alone does not allow for a comprehensive explanation for fear acquisition and maintenance (Kendall & Ronan, 1990).

Two-Factor Model

In an attempt to provide a more comprehensive model, Mowrer (1939) proposed a two-factor model which assumes that both learning processes (classical and operant) may occur simultaneously. The two-factor theory assumes aversive classical conditioning is essential for the development of fears while operant conditioning (reinforced escape/avoidance behaviours) impacts more on the maintenance of fears once established.

Mowrer's (1960; 1939) two-factor model posits a motivational basis for anxiety. Specifically, danger and safety signals (CS) may obtain a motivational component leading to escape or avoidance of anxiety or potential anxiety. Conditioned stimuli associated with anxiety or positive affect are able to serve as signals (warning and safety, respectively) that maintain avoidant behaviour (Mowrer, 1960). For example, getting dressed in the morning may warn a child of pending separation from the mother, motivating the child to become clingy, cry or "throw a tantrum". Alternatively, getting dressed in the morning may serve as a CS, resulting in a chain of behaviours associated with allowing the child to stay in the safety of the home. In both instances, the child need not actually have experienced anxiety per se, rather the child may have anticipated and avoided potentially fearful stimuli. Thus, the motivating qualities (warning and safety signals) of the two-factor theory (Mowrer, 1960) provides an explanation for the maintenance of avoidant behaviour even in the absence of fear. Extinction within this model may be precluded due to children engaging in behaviour motivated towards avoidance/escape or approach towards positive reinforcement. Either way, the initial CS is avoided and prevents the development of more approach related coping behaviours or extinction (Barlow, 1988).

Modelling

A modelling theory provides a further explanation for anxiety development in the absence of an aversive or traumatic event. This theory proposes that interpersonal contexts serve as an important learning medium: fear can develop as a result of observing the fearful reactions of others (e.g., parents and peers)(Kendall & Gosch,

1994). It has been proposed that children may learn maladaptive anxiety through observations of parenting styles that place an emphasis on potential threat and avoidance (Barrett, Rapee et al., 1996). Studies examining the relationship between child and parent fears (Hagman, 1932, Bandura & Menlove, 1968, and Windheuser, 1977, cited in King et al., 1988) support this modelling theory. In addition, multiple studies involving modelling procedures (e.g., filmed modelling and participant modelling) with anxious children have shown that these children exhibit a reduction in anxious responding and an increase in approach behaviour following observations of others (e.g., Lewis, 1974, Murphy & Bootzin, 1973, Ritter, 1969, and Bandura & Menlove, 1968 cited in Ollendick, 1979).

Several factors have been proposed to explain the underlying mechanisms involved in modelling (King et al., 1988). Bandura (1969, cited in King et al., 1988) suggests arousal level, attention to consequences of fearful behaviour, observational focus, and the significance of the model (e.g., parent versus an unfamiliar adult) all play important roles in the development of children's fears. Others suggest that the processes of modelling can be interpreted within a classical conditioning framework (Mineka, 1990, Cook & Mineka, 1990, cited in McAllister & McAllister, 1995). Classical conditioning requires an UCS to consistently elicit a fearful response under appropriate conditions so that it may be related to an internal or external stimulus (CS). Thus, the observation of another person's expressed fear or a fear-eliciting verbal event could serve as an UCS for children (McAllister & McAllister, 1995). Further, the results of modelling do appear to be affected by the nature of the relationship between the model and the learner; the closer the relationship, the more the effect (Bandura, 1989 cited in Dadds, Davey, & Field, 2001).

Cognitive Theories

While behavioural theories provide valuable explanations for the development and maintenance of anxiety, the consideration of cognitive pathways has also received more attention in recent years. Cognitive pathways to anxiety have been able to explain some of the individual differences in fear acquisition not accounted for by behavioural theories. Cognitive theories have become a more dominant psychological perspective in

explaining the aetiology (and treatment) of affective disorders in the past three decades (Clark, 2001).

Cognitive theorists have posited that dysfunctional cognitions (internal self-talk, unconscious thoughts) are salient factors in the development and maintenance of anxiety for children and adults (Clark, 2001; Clark, 1999; Kendall & Chansky, 1991; Laurent & Stark, 1993; Treadwell & Kendall, 1996). Popular models used to explain dysfunctional cognitions have focused on information processing systems (Rachman, 1977; Schwartz & Garamoni, 1986). This section provides a brief review of the precepts of information processing, followed by an overview of three information processing theories applied to children: content-specific, attention intensity, and states-of-mind.

Information processing

Information processing is a conceptual model which views people as complex information processing systems. How one experiences the world results from a complex information processing system whereby information is reciprocally acted on, which in turn is acted on by information within the system (Daleiden & Vasey, 1997; Malcarne & Ingram, 1994). Information processing models specify consecutive steps whereby information is altered (consciously and unconsciously) as it proceeds through successive stages (Daleiden & Vasey, 1997). The fundamental premise of the information processing model for anxiety is that onset and maintenance of dysfunctional activity results from faulty processing systems (Daleiden & Vasey, 1997).

Content-Specific Model

Kendall and colleagues (Kendall & Chansky, 1991; Kendall & Ronan, 1990) propose a content-specific model to explain anxious children's information processing. The model contains two main elements: *schema* (organised frames of reference in memory) and cognitive processing *style*.

Schemas create an internal representation of others and self, creating structure for information processing (style), and affect information retrieval (Malcarne & Ingram,

1994). Kendall and Ronan (1990) propose that for anxious youth, schema are organised around a theme of threat and uncertainty. Anxious children's schema are excessive in their self-focus and worry about evaluation by self and others (Hadwin, Frost, French, & Richards, 1997; Ronan & Kendall, 1997).

The content specific model focuses on two types of cognitive processing styles: *deficient* and *distorted* (Kendall, 1985, cited in Daleiden & Vasey, 1997). Cognitive *deficits* refer to a dearth in the use of adaptive cognitive processing activity. Deficits may result in an inability to deal with the environment. Disorders related to this processing style generally include conduct disorder and ADHD. However, deficits are also observed in anxious children. For example, anxious children are thought to engage in denial and subsequent avoidance of anxiety provoking situations (Daleiden & Vasey, 1997; Kendall & Ronan, 1990).

In contrast, cognitive *distortions* refer to the tendency to misinterpret one's environment, resulting in a biased perception of self, others, and ambiguous situations. How the behaviour manifests itself depends on each individual's perception (schema) of the self and the world (Daleiden & Vasey, 1997). For the anxious child, cognitive distortions refer to the tendency to be excessively self-focused and concerned about evaluations by others, to be hypercritical, and biased in interpretation of threat in ambiguous situations. Behaviours that emerge from this type of processing emphasise the tendency to internalise and over control behaviour.

Anxiety disorders are thought to result more often from distortions rather than deficits (Kendall, Chansky et al., 1992). Thus, when faced with potentially threatening situations, anxious children have been found to engage in cognitive activities. However, the information that anxious children use to interpret any given situation may be distorted or misinterpreted. For example, physiological arousal may be misinterpreted and attributed to anxiety related factors (Kendall & Ronan, 1990; Vasey, 1993).

Kendall and Ronan (1990) propose that anxious children's faulty schema (excessive threat focus) results in positive feedback loops. A self-schema is related to increased affective intensity and the other-schema to increased vigilance for threat. Thus, anxious children may be seen as both seeking and confirming threat. Significant daily

impairment results as stimuli become increasingly associated with feared stimuli (Kendall & Ronan, 1990; Vasey, 1993). That is, the content-specific theory posits that anxious children's overactive threat schemas enhances their processing of threat-relevant stimuli resulting in biased attention towards threatening information (Kendall & Ronan, 1990).

Research has found anxious children exhibit attentional bias. For example, studies which compared non-anxious children with children with a fear of spiders, anxiety disorders and elevated levels of test-anxiety (Martin, Horder, & Jones, 1992; Vasey, Daleiden, Williams, & Brown, 1995; Vasey, El-Hag, & Daleiden, 1996, respectively) all found that anxious children exhibited increased attention towards threat relevant stimuli in ambiguous situations. Further, anxious children have been found to have low levels of perceived ability to cope due to low self-efficacy expectations and a poor evaluation of their own abilities (Kendall & Ronan, 1990). When predicting possible outcomes for situations, responding tends to be biased towards potential negative or threatening outcomes. For example, Leitenberg, Yost and Carroll-Wilson (1986, cited in Daleiden & Vasey, 1997) found that when forecasting outcomes (i.e., test results) anxious children tend to catastrophise, personalise, and over-generalise. One factor that is proposed to influence such faulty thinking is related to the child's familial environment. A body of research has noted several parental characteristics that are more common in parents of anxious children than other children (e.g., Barrett, Rapee et al., 1996; Rapee, 1997). Specifically, the attention to social threat is more associated with families of anxious versus non-anxious children (Barrett, Duffy, Dadds, & Rapee, 2001).

Intensity of Attention

Related to a distorted processing style, attention intensity (Daleiden & Vasey, 1997) is linked to the notion of attention bias. Attention intensity refers to the quantity of cognitive resources assigned to encoding information in relation to resources assigned to other processing stages. No studies have yet been undertaken to investigate anxious children's intensity of attention towards threat-relevant information (Daleiden & Vasey, 1997). However, childhood aggression research indicates it may be vital to the information process. For example, Dodge and Newman (1981, cited in Daleiden &

Vasey, 1997) found that when aggressive boys were required to decide on the guilt of another child they took note of 30% less information than their non-aggressive counterparts. That is, less information was required before advancing to an interpretation stage of processing.

Daleiden and Vasey (1997) propose that anxious children may use a similar mode of processing threat-relevant stimuli. Threat-relevant information, however minor, may result in anxious children moving quickly through the interpretation stage to encode this information as dangerous despite the fact that a search for further information may have contradicted such a conclusion. Anxious children's tendency to interpret ambiguous situations as dangerous may result from the tendency not to look for further information before drawing conclusions. Inadvertently, the child is involved in maintaining anxious symptoms (Daleiden & Vasey, 1997). That is, the cognitive processing provides a feedback loop that has a confirmatory bias.

States-of-Mind Model: The Role of Non-Negative Thinking

The content-specific and attention intensity models highlight anxious children's excessive attention to faulty processing of stimuli. The states-of-mind (SOM) model speaks to the idea of positive to negative thinking (SOM ratios) to help explain normal versus pathological processing (Schwartz, 1993; Schwartz & Garamoni, 1986, 1989). Children with increased levels of anxiety are reported to have increased levels of negative thoughts (e.g., "I'm going to mess up" and "I will get hurt") (Kendall, Flannery-Schroeder, Panichelli-Mindel, Southam-Gerow, Henin, & Warman, 1997; Treadwell & Kendall, 1996). However, decreased levels of positive thinking have not been shown to distinguish anxious children from other children. Kendall (1984, cited in Kendall & Chansky, 1991) refers to this phenomenon as "the power of non-negative thinking." That is, a lower occurrence of negative thoughts is more important than the occurrence of positive thoughts when differentiating between individuals with and without excessive anxiety. Support for the power of non-negative thinking theory is evidenced in treatment focused research. For example, Treadwell and Kendall (1996) found a decrease in children's negative thinking rather than an increase in positive thinking following successful treatment.

While there are no direct studies concerning the stability of SOM ratios for children, some support for the ratios exist. For example, increased levels of negative self-talk has been consistently related to increases in affective distress in children (e.g., Ronan & Kendall, 1997; Treadwell & Kendall, 1996). Additionally, treatment based improvements have been reflected by significant changes in SOM ratios (e.g., Treadwell & Kendall, 1996). However, taking findings together it appears, at least for anxiety, that the frequency of negative thinking is of importance, not SOM ratios *per se*. That is, the power of non-negative thinking, rather than the ratio of negative to positive thinking, is more important.

A Cognitive-Behavioural Model

Tripartite/Neo-conditioning Model

The growth of behavioural and cognitive theories, in conjunction with a large body of research literature has resulted in more inclusive models of anxiety development and maintenance. For example, Rachman (1977) proposed a tripartite model, incorporating both behavioural and cognitive components. This model was later revised and renamed the neo-conditioning model (Rachman, 1991). The model has received considerable attention as a more comprehensive etiological model than either of the cognitive or behavioural models alone (Daleiden & Vasey, 1997; Merckelbach et al., 1996).

Rachman's (1977; 1991) model proposes that in addition to direct conditioning experiences (classical and operant conditioning), both modelling and information processing can lead to fear. That is, the model incorporates three potential pathways for fear acquisition. The first two are behaviourally based: conditioning and modelling; the third, cognitively based. It is this latter pathway that is the key component within the neo-conditioning model. The model proposes that fear conditioning for humans is generally the result of stimulus-stimulus learning, rather than stimulus-response learning. That is, fear conditioning is generally the result of an indirect cognitive process (information processing) during which an individual learns that the unconditioned stimulus can be predicted by the conditioned stimulus (Rachman, 1991).

Rachman (1991) maintains that, rather than organisms simply making associations between co-occurring stimuli (as posited in more strict behavioural conditioning

models), they seek out information via logical and perceptual relations between new information and existing information. Thus, an increasingly sophisticated schema of the world is formed. That is, children and adults are seen to have a growing history of associations (schema) regarding 'new' stimuli influencing the potential development of anxiety and fear. For example, while many people have frightening experiences with dogs, most do not become fearful (diNardo, Guzy, & Back, 1988 cited in Rachman, 1991). Presumably, a history of pleasant experiences with dogs produces a positive schema of harmless associations with dogs, and this schema is not necessarily negated by one or two negative events.

With the inclusion of indirect pathways to fear acquisition, the need for a direct relationship between conditioned and unconditioned stimuli has been removed, eliminating most of the objections about conditioning theory. Recent literature supports the role of indirect pathways of anxiety development. For example, Field, Argyris, and Knowles (2001) prospective study of children's fear acquisition found that verbal information significantly impacted on children's fear beliefs. Children who received verbal information from adults (teacher, parent, or stranger) were noted to have significantly altered fear-beliefs. No notable changes in fear-beliefs were observed when the information source was a peer. Indirect pathways could include modelling and information processing pathways. Direct pathways would include operant and classical conditioning.

A criticism of the tripartite/neo-conditioning model has been that it is excessively broad in its effort to be inclusive (Rachman, 1991). However, it does highlight several important concepts. Of particular interest is the theory's promotion of associated learning of information as primary factors underlying fear development (Rachman, 1991). The existence of these factors has been well supported within the literature (Daleiden & Vasey, 1997; Field et al., 2001).

Developmental Considerations

As discussed in previous chapters, children's fears follow a developmental pattern. For example, during infancy children tend to fear stimuli within their immediate environment (e.g., loud noises and strangers); with increased maturity these fears begin

to include anticipatory events and abstract stimuli (e.g., ghosts, animals, self-injury). The developmental pattern of fear content reflects the relationship between children's cognitive development from concrete conceptions of reality to more abstract conceptions (Vasey, 1993). Developmental changes result in notable effects on anxiety-related cognitive processes (Kendall & Ronan, 1990; Vasey, 1993). Consideration of developmental changes as they relate to the theories discussed suggest that as an individual develops, changing characteristics bring change to the conditioning or learning experience (Dadds et al., 2001). Specifically, altered experience (schema) and cognitive abilities impact on the 'learning' of fears and anxious responding. The 'pathways' associated with the development of fears have been shown to vary according to the nature of the fear and the developmental phase of the individual. For example, fears that develop in late childhood (animals, self-injury) are more strongly associated with modelling and information from significant others, whereas fears that develop in adulthood are more strongly associated with direct conditioning rather than social information (e.g., claustrophobia)(Dadds et al., 2001). (For a detailed discussion of developmental aspects and the theories, see Vasey & Dadds, 2001).

Summary

Multiple theories have been posited to explain the development and maintenance of anxious responding. While no singular model completely explains the aetiology of children's fears in a consistent and coherent manner, each of the theories has contributed to a more comprehensive understanding. The literature indicates that children's anxious behaviour may be established and maintained in multiple ways. The effect, or interpretation, of the environment on a child's responding may be influenced by differences in internal factors, prior experiences, and developmental level.

CHAPTER 4

MULTIMODAL ASSESSMENT

The diagnosis and assessment of childhood anxiety disorders is a recent and developing area (AACAP, 1997). While many of the assessment tools used with children have stemmed from work with adults, the assessment of children has unique challenges. In particular, consideration needs to be given to the extensive developmental changes that occur across the childhood years (Kendall et al., 1991; Kendall, Chansky et al., 1992). Despite this and other unique features of assessment, the goals of childhood assessment are similar to those of adults (Kendall, Chansky et al., 1992). Assessment tends to be conducted for research, diagnostic, and intervention purposes.

This chapter is focused on multimethod assessment as it relates to assessing and diagnosing childhood anxiety for the purposes of treatment and treatment evaluation. The chapter first reviews issues specific to child assessment and developmental considerations. Second, four areas of functioning frequently targeted within assessment: behavioural, cognitive/affective, physiological and family are reviewed. Finally, commonly used multiple source methods and measures of childhood anxiety are reviewed.

The Child Client

Children do not typically self refer for assessment or treatment. Rather, they tend to be referred by parents or teachers who have deemed their behaviour as maladaptive or dysfunctional (Kendall, Chansky et al., 1992). Given this, it is essential that assessment be done in a manner sensitive to the child's potential discomfort. Obtaining accurate information from the child can be challenging as the child's reporting of anxiety may not be accurate (Kendall, Chansky et al., 1992). For example, an anxious child's developmental level may impact on the ability to report symptoms accurately. Further, anxious children may also have perfectionist and social desirability needs that lead them to underreport their anxiety, compromising the reliability of information supplied (Kendall, Chansky et al., 1992; Ronan, 1996).

While parents are often the source of referrals, they may also not provide accurate information regarding their child's anxiety. Research indicates that compared with children's self-reports, parent reports tend to indicate fewer internalising symptoms for children (Ronan, 1996). Additionally, they may not be able to provide a consistent, objective evaluation of their child's behaviour (Kendall, Chansky et al., 1992) – their perspective of the child's behaviour may be distorted or unrealistic. Given that parents are not always accurate reporters, and that anxiety symptoms are often internal and subjective in nature, it is essential that information from multiple sources be obtained (e.g., child, parent, and teacher, Bernstein et al., 1996; Ronan, 1996).

Developmental and Contextual Considerations

A primary function of child assessment is to establish whether the presenting problem is in fact abnormal for a child of that age. To do this, the clinician needs to have a comprehensive understanding of normal childhood development, and inherent within this, a comprehensive understanding of normal fears and anxieties (Yule, 1993). Concurrently, the assessor needs to take into consideration the extensive developmental changes that occur for children across this life period (Kendall et al., 1991). Unlike adult assessment, childhood assessment must address the unique cognitive, socioemotional, and biological changes occurring during childhood.

The developmental suitability of assessment strategies is dependent on the child's expressive and comprehensive abilities (Kendall et al., 1991; Ollendick & Hersen, 1993). For example, most children prior to the age of six years are unable to self-monitor and thus may not benefit from such assessment strategies (Ollendick & Hersen, 1993). Additionally, normative data, as it relates to behaviour, should be considered within the context of what is developmentally normal at any give age (Kendall et al., 1991). For example, fear of parental separation at age two would be considered normal, whereas at age 12 may be considered abnormal. Comparisons with normative data allow for behavioural excesses and deficits to be identified, and any changes across time to be evaluated (Ollendick & Hersen, 1993). Concurrently, assessment also needs to consider whether behaviours or other symptoms are causing significant distress for the child, family, or society (Yule, 1993). That is, while certain behaviours or fears may be

considered normal for a child's age or contextual situation, the intensity or level of interference may not.

Finally, assessment should consider the context in which the child develops and functions: the family, school, peers, community, and culture (AACAP, 1997). That is, symptoms should be assessed both within a set of developmental norms, and within the context of social and environmental demands (Yule, 1993). Situational or cultural demands may be such that certain behaviours that are generally considered to be abnormal are in fact serving an adaptive function. For example, if following a traumatic event (e.g., the death of a loved one), a 12 year-old experienced a period of separation anxiety, this might be considered normal given the circumstances.

Cognitive-Behavioural Assessment Methods

Assessment methods are now reviewed. First, a review of the recommended guidelines for considering selection of assessment measures and sources is provided. Next, the methods are discussed.

Utility and Quality

Four general factors are often used to establish the utility and quality of a measure (Husain & Kashani, 1992). First, the measure should be clear – the use and interpretation of a measure should be unambiguous, keeping inter-assessor variability to a minimum. Second, it should be comprehensive, taking into consideration such issues as the relationship between developmental stages and symptoms. Third, the measure should be practical and ethically acceptable (e.g., easily available, inexpensive, and non-intrusive). Fourth, it should be reliable, valid, and demonstrate treatment sensitivity.

In addition to establishing good utility and quality of individual measures, the validity of “multiple measures” needs to be considered. That is, does the combined use of measures demonstrate incremental validity? Ensuring incremental, or accumulative, validity is important to help counteract, rather than compound, any inadequacies of the individual measures (Ollendick & Hersen, 1993).

Ensuring accumulative utility of anxiety measures is especially important given the often high levels of comorbidity seen in the anxiety disorders (see also Chapter 2: *Prevalence and Comorbidity*). The incorporation of multiple measures may aid initial efforts to differentiate between potentially comorbid conditions (e.g., anxiety and depression).

Assessment Methods

Clinical Interview

Clinical interviews are one of the most common means of assessment both internationally and in New Zealand (Patchett-Anderson & Ronan, 2004). This holds true in the area of assessing childhood anxiety (Husain & Kashani, 1992; Kendall et al., 1991). Interviews provide information regarding the child that is not easily accessible from other sources (Kendall & Ronan, 1990). For example, clinical interviews allow information to be collected regarding the child's developmental history, and cognitive, behavioural, and physical parameters, from both the child and parent's viewpoints (Kendall et al., 1991; Kendall & Ronan, 1990). In addition, results obtained from an interview used in conjunction with other objective measures can provide for more valid conclusions than either can individually (Husain & Kashani, 1992).

Interview schedules range from unstructured, open-ended formats to highly structured formats where only a relatively set flowchart of questions may be asked. Within this continuum are semistructured formats, where specific wording and phrases of questions are not required or specified (Kendall et al., 1991; Kendall & Ronan, 1990). Each of the interview formats have their own strengths and weaknesses (Kendall & Ronan, 1990; Ronan, 1996). Unstructured formats enable more flexibility when assessing the content and severity of specific problems and allow rapport to be developed. However, with increased flexibility comes decreased objectivity. Specifically, diagnostic reliability and validity of the assessment procedure may be affected (Kendall & Ronan, 1990; Ronan, 1996).

Structured formats, while potentially lacking flexibility have increased reliability along with easily quantifiable information (Kendall & Ronan, 1990; Schniering, Hudson, & Rapee, 2000). Structured or semistructured formats do not contain as much potential

scope as unstructured formats. However, they do allow for some flexibility and rapport building. Further, more structured interviews require less clinical training to administer (AACAP, 1997; Kendall & Ronan, 1990) making them easier to use in a research setting. Given these factors and the assessment literature recommendation that child assessment in treatment outcome evaluation use more structured interview formats (Kendall & Ronan, 1990; Ronan, 1996), the remainder of this section will focus on structured and semistructured interview measures.

Since the development of DSM-III, various empirically tested structured and semistructured interview schedules have been developed to assess each of the major childhood diagnostic categories (Strauss, 1993). For example, the Diagnostic Interview Schedule for Children (DISC: Costello, Edelbrock, Kalas, Kulcan, & Klaric, 1984), the Child Assessment Schedule (CAS: Hodges, Kline, Stern, Cytryn, & McKnew, 1982), the Schedule for Affective Disorders and Schizophrenia for School-Age Children (K-SADS: Puig-Antich, Orvaschel, Tabrizi, & Chambers, 1978), and the Interview Schedule for Children (ISC: Kovacs, 1978). All of the schedules have accompanying parent interviews and have undertaken, or are currently being revised, to ensure compatibility with revised diagnostic criteria (e.g., DSM-IV-TR).

Thus far, the utility of broad-based interviews for reliably measuring anxiety disorders appears inadequate. While parent-child agreement has been found to be moderate to high for diagnostic categories in general, this is often not the case for anxiety diagnoses (Kendall et al., 1991; Schniering et al., 2000). Test retest coefficients for the DISC and the K-SADS have been shown to be poor (.27 to .39 and .27, respectively: Costello et al., 1984; Chambers, Puig-Antich, Hirsch, Paez, Arbrosini, Tabrizi, & Davies, 1985, as cited in Silverman & Nelles, 1988). Similar results have been found regardless of informant source. For example, Hodges and colleagues (1987, as cited in Silverman & Nelles, 1988) investigation of the diagnostic agreement between the K-SADS and the CAS found coefficients of .37 for child only, and .51 for parent only interviews. An exception is the ISC. Last and colleagues (1985, as cited in Silverman & Nelles, 1988) reported diagnoses coefficients as high as .70 for this measure. However, the ISC is clinically limited due to it being symptom, rather than syndrome focused (Silverman & Nelles, 1988). Additionally, it does not provide sufficient information to allow the practitioner to work with the clinically anxious child. That is, it does not provide a

functional analysis of the problem, establishing factors such as antecedent (situational and cognitive) cues, and the level of avoidance (Silverman & Nelles, 1988).

As a result of the limitations of general diagnostic interviews, anxiety-specific, semistructured interview schedules have been developed. For example, the Children's Anxiety Evaluation Form (CAEF: Hoehn-Saric, Maisami, & Wiegand, 1987), and the Anxiety Disorders Interview Schedule for Children-Child and Parent versions (ADISC/P: Silverman & Nelles, 1988). However, of these two, the CAEF has been found to be of limited utility. While it has demonstrated adequate reliability (Hoehn-Saric et al., 1987), it also has several limitations. First, information is gathered exclusively from child reports; an issue given the accumulating evidence that there is often a discrepancy between child and parent reporting (Kendall et al., 1991; Ronan, 1996; Silverman & Nelles, 1988). Second, there is a lack of correspondence between information gathered using the CAEF and a classification system such as the DSM. Rather the CAEF collects more general data related to history, symptoms, and visible anxiety signs (Strauss, 1993). Like the ISC, the CAEF does not provide sufficient information to allow the practitioner to work with the clinically anxious child (Silverman & Nelles, 1988; Strauss, 1993).

The ADISC/P (Silverman & Nelles, 1988), and the more recent version (Anxiety Disorder Interview Schedule for DSM-IV: Albano & Silverman, 1996), appears to be a more robust measure. The ADISC/P has demonstrated moderate or better child-parent, and interrater agreement compared to other assessment interviews. For example, Silverman and Eisen's (1992) study of 50 outpatient children and their parents at a specialty clinic in the United States found overall coefficients for child and parent interviews to be .79 and .67 respectively. The correlations for interrater agreement of severity ratings for primary diagnosis based on child, parent, and composite scores were also adequate (.89, .87, and .88 respectively). Further, at a research level, graduate students in psychology are reported to be able to learn how to administer the measure in a reliable fashion without excess difficulty (Silverman & Eisen, 1992; Silverman & Nelles, 1988). The use of this measure by childhood anxiety researchers has increased due to its high reliability, its structure (that helps to enhance rapport), and its ability to produce specific, comprehensive information on the child (Ronan, 1996). For further

description of the ADISC/P interview, including a review of reliability and validity research, see Chapter 7.

Self-Report Measures

Like clinical interviews, self-report paper and pencil measures¹ are one of the most common means of assessing childhood anxiety (Kendall, Chansky et al., 1992). Multiple self-report measures are available, with many incorporating coexisting cognitive, behavioural, affective, and physiological factors. In general, they are comprised of fear survey schedules, providing lists of fear evoking situations and objects, and response set lists, asking the child to describe their subjective experiences (King, 1993). This section provides a review of the limitations and advantages of self-report measures and three commonly used tools.

When considering the use of self-report measures, several potential issues pertaining to utility need to be considered (Kendall & Ronan, 1990). First, they often do not adequately measure situation specific factors as they relate to children's fears and anxiety. Second, psychometric data for gender and age are lacking for some measures. Third, the instrument may not always be an accurate measure of internal states. A potential for reduced self-reporting accuracy may result from self-report measures inability to detect subtle changes in children's cognitions, behaviour, and affect (Kendall & Ronan, 1990). It may also stem from anxious children's frequent need to appear socially desirable or their not being fully aware of internal states (Kendall & Ronan, 1990).

Despite the potential limitations of self-report measures, they do have utility within therapeutic and research settings (Kendall & Ronan, 1990; Schniering et al., 2000). First, they provide an economical and convenient means of quantifying information and thus work well as screening and measurement devices. Second, while some measures do not have adequate psychometric data, many do. Third, the use of multiple measures can be used to assess more than one response channel (e.g., the Revised Children's Manifest Anxiety Scale, the State-Trait Anxiety Inventory for Children, and the Childhood Depression Inventory; RCMAS, STAIC and CDI respectively). Incremental

¹ From this point forward paper and pencil self-report measures will simply be referred to as self-report measures.

utility may be established by comparing items from such measures with more specific self-report or other measures (e.g., coping ability, direct observations)(Kendall & Ronan, 1990). Further, the use of multiple self-report measures can help differentiate between potentially comorbid disorders. For example, the STAIC and the CDI can help differentiate between anxiety and depression (Ronan, 1996).

The three most commonly used screening tools for childhood anxiety are the Fear Survey Schedule for Children – Revised (FSSC-R: Ollendick, 1983), the Revised Children’s Manifest Anxiety Scale (RCMAS: Reynolds & Richmond, 1978), and the State-Trait Anxiety Inventory for Children (STAIC: Spielberger, Edwards, Lushene, Montuori, & Platzek, 1973). Each are used in many settings to serve several practice- and research-related roles (e.g., Patchett-Anderson & Ronan, 2004). All three measures are useful as selection or screening devices for treatment and are useful measures of pre- to post-treatment change (Ollendick, 1983; Schniering et al., 2000). Further, each of the measures has specific advantages. For example, data collected from the FSSC-R can aid in the development of a fear hierarchy, in turn aiding the establishment of treatment targets (Kendall, Chansky et al., 1992; Silverman, Ginsburg, & Kurtines, 1995). The RCMAS has the added utility of its unique inclusion of a social desirability assessment: 9 of the 37 items make up the RCMAS Lie Scale. This is particularly useful for identifying the accuracy of self-reporting for children who tend to ‘fake good,’ underreporting anxiety symptoms (Ronan, 1996). Finally, the STAIC is particularly useful for establishing an initial symptom inventory of children’s present and prevailing tendencies. It also may serve as an indicator of change across individual treatment sessions (Ronan, 1996).

Additional measures for assessing children’s self-perceived coping ability, as well as parental perceptions of children’s coping ability are useful to monitor target treatment areas as well as treatment efficacy. For example, the Coping Questionnaire, child and parent versions (CQ-C and CQC-P, see Kendall, 1994) can be used to track the child and parental perceptions of the child’s ability to cope with specific, treatment targeted areas. For a more in depth review of the self-report measures discussed in this section, see Chapter 7.

Family Assessment

While there are no specific measures designed to assess anxiety in the family, there are multiple family assessment techniques designed to assess childhood anxiety (Kendall, Chansky et al., 1992). Two types of family assessment are observational and self-report (Kendall, Chansky et al., 1992). Observational assessments focus on interactional approaches (e.g., parent-child, family), using coding and rating systems. Coding systems directly observe family member interactions to provide data at micro and macro-analytic levels. Rating systems on the other hand assess patterns of functioning across interpersonal dimensions (e.g., warmth and control). While observational systems have shown promise (e.g., Dadds, Rapee, & Barrett, 1994), they are limited due to a lack of psychometric properties (Kendall, Chansky et al., 1992). A more practical assessment tool appears to be self-report measures (Ronan, 1996).

Multiple self-report measures exist, targeting various family-related areas. From a cognitive-behavioural perspective, one area of considered importance for assessment is cognitions or perceptions associated with events and people (Kendall, Chansky et al., 1992). There is the idea that parent's emotional functioning impacts on the child's experience of anxiety (Kendall, Chansky et al., 1992). Recently, childhood anxiety treatment research (e.g., Kendall et al., 1997) has assessed parent's emotional functioning (e.g., depression and anxiety: Beck Depression Inventory; State Trait Anxiety Inventory, respectively) with the purpose of investigating the relationship between the child and parent affective states, enabling related issues to be assessed and targeted.

Behavioural Assessment

The behavioural assessment of children includes both structured and unstructured observation techniques. They can be categorised into four assessment types: behavioural avoidance tasks (BATs), direct observations, rating scales and checklists, and global ratings (Kendall & Ronan, 1990). Each of these assessment modes will now be discussed.

The BATs and other types of direct observations tend to be structured and specific in nature, carried out by trained raters in the child's natural environment (e.g., the

classroom or playground). While structured modes of assessment benefit from the use of trained raters, using operationally defined behaviours to compare the observed behaviour, this type of assessment is limited by a lack of standardised procedures (Kendall et al., 1991; Schniering et al., 2000). Lack of standardisation makes the comparison of information collected using such modes difficult across studies. Further, they are often difficult to carry out and require considerable time and energy. Consequently, such methods are not considered clinically practical (Husain & Kashani, 1992; Schniering et al., 2000; Strauss, 1993).

Less structured observation techniques, such as global ratings, provide a more general assessment of behaviour. These measures tend to use dimensional scales. For example, the scale may range from never to always, or from negative to positive (Kendall & Ronan, 1990). There are several benefits of using global ratings including the flexibility they allow for assessing various behaviours; their use as summary indicants pre- and post-treatment, as well as during treatment; and the provision of an efficient and standardised means of obtaining behaviour ratings from those involved with the child, such as parents and therapists (Kendall & Ronan, 1990). Potential limitations of such measures tend to revolve around a possible lack of operational clarity (Kendall & Ronan, 1990). For example, ambiguity of ratings, rater drift or bias due to ambiguity of 'specified' behaviour, and comparative difficulties across research with other rating scales may occur. Further, global ratings may not be as sensitive to change as specific ratings scales. If global ratings are to be used, Kendall and Ronan (1990) recommend that they be used in conjunction with more specific measures.

Techniques such as parent and teacher rating scales and checklists, which are less structured than direct observation techniques, but more specific than global ratings have the advantage of ease of use and increased sensitivity to treatment outcome. However, these too can be limited. In particular, as less structured or unstructured assessments are frequently carried out via parent and teacher informants they may be limited by a lack of observer training, and suffer from observer bias (Kendall et al., 1991). Despite this, they provide vital information and are considered important assessment tools (Kendall et al., 1991). Given their use in the current study, parent and teacher rating scales are now discussed in more depth.

Parent and Teacher Rating Scales and Checklists

A common method used to assess observable symptoms of anxiety in different settings is parent and teacher rating scales or checklists. Together, parent and teacher reports provide an efficient and cost effective means of assessing a wide variety of problem areas. Parent and teacher reports are considered particularly important given that they are frequently responsible for referring children for treatment, and for supplying information regarding any intervention progress (Strauss, 1993). Further, the information that each source provides is also important. Outside of the school setting parents are the people that children generally spend the most time with and after parents, teachers are often the most important adults in children's lives. The school setting is a central development area in which problems, possibly not evident elsewhere may arise. Teacher reports of child functioning are desirable due to teachers' ability to report on areas that might not be apparent to parents. Additionally, teachers' reports are unlikely to be affected by family dynamics (Achenbach, 1991c).

Before discussing the merits of parent and teacher checklists several limitations need to be highlighted. The measures tend to rely on retrospective information that may be susceptible to observer bias (e.g., unrealistic expectations of parents). Further, most of the rating scales have not been developed to assess children's general expression of anxiety and do not discriminate between each of the anxiety subtypes referred to by the DSM (Morris & Kratochwill, 1983). In addition, teachers in particular may not observe anxiety as much as they are able to report on externalising behaviour (Kendall, 1994). Despite these limitations, such measures have been shown to be valuable for their general screening properties, their ability to collect information that may otherwise not be readily available, and their sensitivity to treatment outcome (e.g., Strauss' State-Trait Anxiety Inventory for Children - Modification of Trait Version for Parents: Flannery-Schroeder & Kendall, 2000). Additionally, they are economical, and relatively simple to administer and score (Ronan, 1996).

The three most commonly used parent- and teacher-rating scales and checklists are Achenbach's Child Behaviour Checklist (CBCL), Quay and Peterson's Behaviour Problem Checklist, and Miller et al.'s Fear Survey for Children (King, 1993). Each measure has been developed, and standardised for use with children aged four to sixteen. Of these measures, the CBCL is reported to be the most commonly used

general screening tool for childhood problems including anxiety (Kendall et al., 1991; Patchett-Anderson & Ronan, 2004).

The Child Behaviour Checklist for 4 to 18 year-olds (CBCL/4-18: Achenbach, 1991b) has several advantages for the assessment and measurement of anxiety within a clinical-research based setting. It has a specific subscale focused on general anxiety (and depression) symptoms as well as a more broad-based internalising subscale. The measure has adequate reliability, validity, and normative data and has been shown to discriminate well between internalising and externalising disorders (Achenbach, 1991b). In addition to behaviour problems the measure assesses competencies, allowing for a comprehensive assessment of children's problems and strengths (Achenbach, 1991b).

Two additional parent rating scales are often used in research (e.g., Flannery-Schroeder & Kendall, 2000; Howard & Kendall, 1996; Kendall et al., 1997): the STAIC – Modification of trait version for parents (STAIC-A-Trait-P: Strauss, 1987b), and the parent version of the Coping Questionnaire for children (CQC-P: Howard & Kendall, 1996). The STAIC-T-P allows for more specific information to be obtained regarding children's general tendency to experience anxiety. The measure has been found useful particularly with regard to assessing anxiety in children who may be underreporting, and for assessing treatment outcome effects (see Flannery-Schroeder & Kendall, 2000; Kendall, 1994).

The CQC-P is a more individualised measure than the CBCL or the STAIC-T-P. It provides specific information on a defined behaviour based on behavioural observations by parents and children. While it may be limited by its reliance on an untrained observer and retrospective reporting, it has the benefit of targeting specific, identified problem behaviours without altering children's natural environments. Further, its utility within a research setting has been indicated with intervention-based research showing the measure to be sensitive to treatment effects (Flannery-Schroeder & Kendall, 2000; Howard & Kendall, 1996; Kendall et al., 1997). For further discussion of the CBCL/4-18, the STAIC-T-P, and the CQC-P, including a review of reliability and validity research, see Chapter 7.

Cognitive Assessment

The cognitive assessment of anxious children includes multiple target factors including self-statements, irrational beliefs, current concerns, expectations, attributions, images, and the ability to problem solve (Kendall & Ronan, 1990). Multiple modes of obtaining this information have been developed including: self-monitoring, self-talk recordings, thought listing, interviews, and self-report endorsements. The merits of several of these assessment techniques have been discussed in previous sections (clinical interview, self-report measures). This section briefly reviews the utility of cognitive assessment in general.

Notably, cognitive assessment is essential to the cognitive-behavioural therapist as most interventions include some cognitive focus (e.g., distorted attributions, excessive self-focused attention, and negative automatic thoughts). Inclusion of cognitive evaluations enables the assessor to obtain specific information not obtainable via other means (e.g., more general self-reports, Ronan, 1996). The information collected from cognitive assessment enhances data collected from more traditional methods, providing the actual thoughts associated with behavioural and physiological responding. Inclusion of this type of information increases the clinician's ability to investigate the role that the child's thoughts have in mediating fearful or anxious behaviour. Additionally, it serves as a treatment evaluation tool, enabling the clinician to investigate therapeutic change, and potentially specify the mechanisms of that change (Kendall & Ronan, 1990).

Several cognitive characteristics associated with the aetiology, maintenance, and remediation of childhood anxiety have shown potential utility in the assessment and treatment process: cognitive content, schemata, processes, and products (Kendall & Ronan, 1990, see also Chapter 3: Cognitive Theories). Ultimately, cognitive assessment aims to investigate these characteristics and how they relate to the child's behavioural and physiological anxiety response channels (Kendall & Ronan, 1990). A recent cognitive endorsement measure, targeting self-statements specific to anxiety, depression or both (the Negative Affect Self-Statement Questionnaire: NASSQ: Ronan et al., 1994) is reviewed in Chapter 7.

Physiological Assessment

While there is a severe lack of information regarding the assessment of children's anxious physiological responding (Patchett-Anderson & Ronan, 2004; Ronan, 1996), assessment techniques are available. The two most commonly used physiological response measures in children are cardiovascular and electrodermal.

Cardiovascular responding can be assessed via heart rate, blood pressure, and peripheral blood flow. Heart rate tends to be the most common means of cardiovascular assessment as it is administered with relative ease and is less sensitive to measurement artefacts than other modes (King, 1993). Research findings, however, leave many questions unanswered. While some researchers have found that when placed in a potentially stressful situation, anxious children have increased heart rates when compared to their non-anxious peers (e.g., Beidel, 1988, as cited in King, 1993), others have found it difficult to differentiate anxious from non-anxious children using heart rate (Tal & Miklich, 1976, as cited in King, 1993). Nietzel and Bernstein (1981, as cited in King, 1993) report that:

“(a) heart rate is overly sensitive to motor and perceptual activity (a problem especially relevant for children) and that it may be confounded easily with stress, and (b) heart rate can be idiosyncratic in that it may increase or decrease or remain stable in response to anxiety-provoking stimuli” (p. 321).

Electrodermal responding, generally assessed via methods of skin conductance and resistance, is susceptible to similar problems. Electrodermal responding is very reactive, proving sensitive to environmental and measurement artefacts (King, 1993).

Regardless of the methodology used for direct physiological responding the large time and money costs required can make it difficult to carry out (Kendall et al., 1991). The use of such measures in research and clinical settings is further limited due to complications inherent in this type of assessment, and the dearth of normative data for ‘normal’ and anxious physiological responding in children (King, 1993; Schniering et al., 2000). While direct physiological techniques of assessment have promise, their use is not supported within clinical or even treatment outcome settings (King, 1993; Schniering et al., 2000).

The limited utility of direct physiological techniques does not preclude a general subjective assessment of children's responding. Many of the other modes of assessment (e.g., cognitive and behavioural) collect subjective information regarding children's responding (e.g., interview schedules and self-report measures). For example, the State Trait Anxiety Inventory for Children (Spielberger et al., 1973) asks children and parents (Strauss, 1987a) to endorse statements indicating physiological arousal related to anxiety.

Summary

A variety of methods are necessary when assessing children. There is a need to collect information across all three response channels (cognitive, behavioural, and physiological), while also taking into consideration the child's developmental state and environment. Use of multiple measures across multiple sources (parent, child, teacher) allows for a more comprehensive assessment of the anxious child than any one measure can provide. Additionally, multiple measures allow for a comprehensive, quantifiable assessment of symptoms and for treatment outcome evaluation. While each of the assessment modes has limitations, the selection of developmentally appropriate, psychometrically sound measures should provide an incrementally valid battery of measures.

CHAPTER 5

TREATMENT

This chapter reviews the treatment effects of psychotherapy and two treatment modalities pertinent to the current research: behavioural and cognitive-behavioural therapy. Treatment outcome literature related to the effectiveness of behavioural therapy (BT) and cognitive-behavioural therapy (CBT) for childhood anxiety is reviewed. In addition to outcome literature, the major aims of treatment are briefly reviewed; the CBT section includes the major aims of the manualised CBT and BT programmes used in the current research. The chapter concludes with a brief discussion of the comparative treatment effects of BT and CBT.

Psychotherapy Outcome

Over the past couple of decades there have been multiple, large scale meta-analyses investigating the effectiveness of treatments for youth with psychological or behavioural problems (e.g., Casey & Berman, 1985; Weisz, Weiss, Han, Granger, & Morton, 1995). These have provided support for psychological treatments for children. For example, Weisz and Weersing (1999) reviewed four broad-based child treatment meta-analyses (i.e., Casey & Berman, 1985; Kazdin, Bass, Ayers, & Rodgers, 1990; Weisz, Weiss, Alicke, & Klotz, 1987; Weisz et al., 1995). The review indicated treatment was better than no treatment with overall effect size (ES) values ranging from .71 to .88. The mean ES was .80, indicating that 79% of the treated children were better off than the untreated (control) children. Effect sizes found for child-focused meta-analyses are similar to those found for adult therapies (Weisz & Weersing, 1999).

Multiple meta-analyses have investigated the treatment effects of behavioural and cognitive-behavioural therapy. Meta-analytic studies indicate that behavioural techniques effect more positive change than non-behavioural techniques (e.g., Casey & Berman, 1985; Kazdin et al., 1990; Weisz et al., 1987). Three of the meta-analyses reviewed in Weisz and Weersing's (1999) study (i.e., Casey & Berman, 1985; Weisz et

al., 1987; Weisz et al., 1995) report larger ESs for behaviourally based interventions compared to non-behavioural interventions (e.g., .85 and .44 respectively: Weiss & Weisz, 1995).² Similarly, Durlak et al.'s (1991) meta-analysis of CBT outcome studies for maladaptive children (aged 5 to 13 years) reported that overall CBT outcome ESs were comparable with those found for psychotherapy (i.e., ES = .55 to .92 compared with .71 to .88: Weisz & Weersing, 1999).

Comparable ES findings have been reported for treatment of childhood anxiety disorders. McMurray and Ronan's (2004) recent meta-analysis of 17-treatment outcome studies found behavioural and cognitive-behavioural treatment to be better than no treatment for anxious children and adolescents. McMurray and Ronan found a mean ES of .77, indicating that the average treated child was better off than approximately 79% of untreated children. Behavioural and cognitive-behavioural approaches are now discussed.

Behaviour Therapy

Behavioural therapies are based on learning theories. As discussed in Chapter 3, each of the behavioural therapies assumes that maladaptive behaviours are learned and maintained by various environmental contingencies. The primary aim of treatment is on changing maladaptive behaviours through the use of scientifically established techniques and teaching new skills for more adaptive functioning (Kendall & Norton-Ford, 1982). Treatment techniques used to produce change vary according to the disorder and type of functioning targeted (Kazdin, 1994). Several techniques have been found to be effective with anxious children including relaxation, systematic desensitisation (exposure), contingency management, and modelling (Beidel, Turner, & Morris, 2000; Kendall & Gosch, 1994; Southam-Gerow et al., 1997). Three primary approaches – systematic desensitisation, modelling, and contingency management – are now discussed.

² Kazdin et al.'s (1990) study did not make this comparison.

Systematic Desensitisation

Systematic Desensitisation (SD) is the gradual exposure to increasingly anxiety-provoking situations. It is based on the premise that by pairing an anxiety-provoking situation with an incompatible response, typically relaxation, anxiety responding will be inhibited (Wolpe, 1958 as cited in Husain & Kashani, 1992). The theory behind this technique is that fears and phobias are classically conditioned responses that can be unlearned via counter-conditioning techniques. Counter-conditioning is done by exposing the child to anxiety-provoking stimuli, either imaginal or *in vivo*, in the presence of an incompatible response. To conduct SD, three basic steps are typically used (King & Tonge, 1992): (a) progressive relaxation training, (b) the development of a fear hierarchy, and (c) the systematic pairing of relaxation with increasingly anxiety-provoking situations. Typically, SD is conducted with the use of graduated exposure of the child to the anxiety-provoking situation within controlled settings designed to ensure that no gain is achieved by avoiding the situation (Husain & Kashani, 1992). A key component of the technique is ensuring that exposure occurs for sufficient time to allow for a reduction in anxious responding (Kendall, Chansky et al., 1992).

Systematic desensitisation techniques have received considerable support for use with children, and have frequently been used as part of a more comprehensive anxiety treatment package for children over the past decade (e.g., Barrett, Dadds et al., 1996; Hayward, Varady, Albano, Thienemann, Henderson, & Schatzberg, 2000; Howard & Kendall, 1996; Kendall, 1994; Kendall et al., 1997; Last, Hansen, & Franco, 1998; Öst, Svensson, Hellstrom, & Lindwall, 2001). Numerous outcome studies (e.g., Miller, Barrett, Hampe, & Noble, 1972; Ultee, Griffioen, & Schellekens, 1982) have established SD alone to be more effective than no treatment. Recent reviews of treatment outcome studies have established SD techniques as probably efficacious (Chambless & Ollendick, 2001; Ollendick & King, 1998).

In addition to imaginal and *in vivo* techniques, SD techniques include emotive imagery and eye movement desensitisation and reprocessing (EMDR). Research has only just begun to assess the efficacy of these treatment techniques with childhood anxiety disorders. Currently neither is empirically validated. With regard to the imaginal and *in vivo* SD, research suggests that *in vivo* is more effective than imaginal (Ollendick & King, 1998). For example, research (Ultee et al., 1982) comparing the effects of *in vivo*

desensitisation, imaginal desensitisation and a control condition for water phobic children (n = 24; aged 5 to 10 years) found *in vivo* desensitisation superior to both imaginal desensitisation and the control condition. In fact, no difference was found between the latter two groups (Ultee et al., 1982). An explanation for *in vivo* superiority is that anxious children may often lack the skill base and familiarity to perform avoided tasks. *In vivo* desensitisation incorporates a practical, skills-based, training component whereby children get to actually practise new skills in real life situations (Ollendick & King, 1998). Further, the literature suggests that imaginal exposure may be difficult for younger children (Ollendick & King, 1998).

Modelling

Modelling or observational learning is based on the principles of vicarious learning and assumes that behaviour can be acquired, facilitated, reduced, or eliminated via observing the behaviour of others (Bandura, 1986). Modelling involves demonstrating appropriate, non-fearful behaviour in the presence of anxiety-provoking situations (King & Tonge, 1992). The efficacy of modelling techniques for childhood phobias is well documented (Kendall, Chansky et al., 1992).

Three alternative forms of modelling have been used within anxiety research with children: symbolic modelling, live models, and participant modelling (King & Tonge, 1992). Numerous outcome studies (e.g., Bandura & Menlove, 1968, Hill, Liebert & Mott, 1968, Lewis, 1974, Bandura, Blanchard & Ritter, 1969 and Blanchard, 1970: cited in Ollendick & King, 1998) have established filmed modelling, live modelling and participant modelling to be more effective than no treatment. Additionally, participant modelling has been found to be more effective than filmed and live modelling (Ollendick & King, 1998). Recent reviews of treatment outcome studies (Chambless & Ollendick, 2001; Ollendick & King, 1998) have established filmed and live modelling as probably efficacious and participant modelling as efficacious.

An explanation for participant modelling superiority is that it diminishes fearful responding via observations of others coping with an anxiety-provoking situation, combined with graduated and assisted exposure to anxiety-provoking stimuli (Kazdin & Weisz, 1998; King & Tonge, 1992). Participant modelling often incorporates a role-

play procedure for children (Kendall, 1993). Role-plays combined with co-occurring *in-vivo* experiences enable the child to practice coping skills. They enable the therapist to identify precipitating factors that cause the child distress and to provide a coping model, rather than one of complete success (i.e., a mastery model).³ This allows the therapist to model difficulties similar to those experienced by the child. In this manner, coping in the face of non-success can also be modelled (Kendall, Chansky et al., 1992). Thus, participant modelling may have similar advantages to *in vivo* desensitisation in that it incorporates a practical, skills-based, training component whereby children get to actually practise new skills by first watching others.

Contingency Management

Derived from operant conditioning principles, contingency management (CM) is based on the principle that environmental consequences of behaviour will affect the frequency with which the behaviour occurs (Kendall, Chansky et al., 1992). Thus, behaviours followed by positive reinforcement are more likely to reoccur. The technique allows the therapist to eliminate undesirable behaviour and shape more adaptive behaviours (Southam-Gerow et al., 1997).

Specifically, CM involves the anxious child being reinforced for approaching feared situations or objects. In turn, rewards are removed for fearful behaviours – that is, fearful behaviours are put on an extinction schedule (Kendall, Chansky et al., 1992). Unlike the underlying assumptions of SD and modelling (that elimination of anxiety and fear via direct or vicarious learning is necessary before approach behaviour will occur), CM assumes that reinforcement for graduated approach responses to feared stimuli are sufficient to reduce anxious responding (Ollendick & King, 1998). The most frequently used CM procedures are shaping, positive reinforcement and extinction (Ollendick & King, 1998).

³ Coping models have a greater positive impact on anxious responding than mastery models (Meichenbaum, 1971). Coping models exhibit initial anxious responding similar to that of the child, followed by behaviour that helps overcome fear (e.g., relaxation) and promotes interaction with the feared stimuli. By comparison, mastery models perform tasks feared by observers with little or no anxiety or hesitation. Where symbolic or live models are used, other model similarities, such as age may increase model effectiveness (Kornhaber & Schroeder, 1975). The literature indicates that as with the development of anxious responding (see Chapter 3), the reduction or extinction of anxious responding for children is effected by the nature of the relationship between the model and the learner (Dadds et al., 2001).

Contingency management procedures have proven effective in reducing anxious behaviour and increasing the rate of coping behaviour for children with anxiety disorders (Kendall & Gosch, 1994). CM techniques have been shown to be effective for social and specific phobias, and school refusal (Beidel et al., 2000; King & Ollendick, 1982; Silverman, Kurtines, Weems, Ginsburg, Rabian, & Serafini, 1999). As with SD techniques, CM procedures have frequently been used as part of a more comprehensive anxiety treatment package for children (e.g., Barrett, Dadds et al., 1996; Hayward et al., 2000; Howard & Kendall, 1996; Kendall, 1994; Kendall et al., 1997). Numerous outcome studies investigating specific treatment components (e.g., Menzies & Clarke, 1993; Obler & Terwilliger, 1970) have established CM to be more effective than verbal coping skills and therapist modelling alone (for a review of outcome studies see Ollendick & King, 1998).

Cognitive Self-control Training

Cognitive self-control training (SCT) is the most commonly used cognitive technique in the treatment of anxious children (Dadds, Barrett, & Cobham, 1998). Consistent with cognitive theories of anxiety, SCT assumes that as a result of altering maladaptive talk, positive behavioural change will occur (Kendall, Chansky et al., 1992). SCT involves the modification of faulty or distorted anxiety-based thinking (Kendall & Gosch, 1994). The therapist helps the child identify their existing self-talk, and replace the negative thinking and expectations with more adaptive, realistic self-talk.

A literature review (Ollendick & King, 1998) and individual outcome studies (discussed below) have all established SCT procedures as probably efficacious in the treatment of childhood anxiety disorders. While SCT is generally used as part of a larger CBT package, several studies have focused specifically on self-talk and self-control interventions. For example, Graziano and Mooney's (1980) clinical outcome trial compared the effects of verbal self-instruction and a waitlist control condition for children ($n = 33$; aged 6 to 13 years) with severe night-time fears. The self-instruction group was taught to use coping self-talk ("brave" statements) and relaxation. Results found children in the self-instruction condition to have significantly less nighttime fears than the control group. Treatment gains were maintained or continued across two to three year follow-up (Graziano & Mooney, 1980, 1982).

More recently, Silverman and colleagues (Silverman, Kurtines, Weems et al., 1999) compared children with phobic disorders ($n = 81$; aged 6 to 11 years) across three conditions: (a) CM treatment that focused on reinforcement and extinction strategies; (b) SCT treatment that focused on self-evaluation and self-talk; or (c) an active-control condition focused on education. All treatment conditions were found to effect significant improvement post-treatment and at follow-up (3-, 6- and 12-months) with no notable difference across conditions.

Cognitive-Behavioural Therapy

Cognitive-behavioural therapy (CBT) uses both cognitive and behavioural techniques and is based within information processing and social learning paradigms (Kendall & Gosch, 1994; Southam-Gerow et al., 1997). The development and maintenance of dysfunction is conceptualised as resulting from cognitive and behavioural antecedents (Southam-Gerow et al., 1997. See Chapter 3).

Child-based CBT is focused on the learning processes and the role of contingencies and models in the child's environment (Kendall, 1993). Within this context, importance is placed on the child's information-processing style as a mediating factor in the development and reduction of psychological problems. A primary aim of CBT is to reduce distress by altering maladaptive cognitions and behaviours via the provision of new coping strategies such as information processing skills, social skills, self-confidence, and relaxation (Hollon & Beck, 1994).

A primary focus of treatment for anxious children is on the relationship between three anxiety response domains: cognitive, behavioural, and physiological (Kendall et al., 1991). This focus is based on the observation that excessive anxiety in all ages is manifested in cognitive (e.g., maladaptive thoughts, distorted thinking), behavioural (avoidance behaviour, temper-tantrums), and physiological (increased heart rate, "butterflies") symptoms. Cognitive-behaviourally-based treatment views these three response domains as causally related and cognitively mediated (Kendall et al., 1991). Cognitive targets include: expectations, attributions, self-statements, problem-solving

skills, and schemas, with the purpose of increasing understanding and altering dysfunctional behaviour (Kendall & Gosch, 1994).

Child-based CBT tends to use a uniform family of techniques (Kazdin & Weisz, 1998). While the application of these techniques may vary according to the clinician/ researcher, there are several common features. First, treatment generally uses a combination of in-session and homework based tasks, peer or therapist modelling, and contingency based rewards (Kazdin & Weisz, 1998). Second, treatment usually incorporates education and behavioural exposure (Kazdin & Weisz, 1998). Within the framework of education, children learn about the relationship between physiological arousal and anxious feelings. In doing so, children may identify their own individual response pattern (e.g., butterflies, headache, and flushed face) and use these as cues for new adaptive coping strategies. Exposure tends to involve a variety techniques (Kazdin & Weisz, 1998. See discussion on Systematic Desensitisation, Modelling, and Contingency Management).

As discussed, the literature provides considerable support for the use of systematic desensitisation (exposure), contingency management, and modelling with anxious children both as independent treatment techniques and as part of more comprehensive packages (e.g., Barrett, Dadds et al., 1996; Hayward et al., 2000; Howard & Kendall, 1996; Kendall, 1994; Kendall et al., 1997; Last et al., 1998; Öst et al., 2001).

Cognitive-Behavioural Therapy: Manualised Treatment

Cognitive behavioural therapy for anxiety disordered children was first developed and manualised by Kendall and colleagues. In 1990, Kendall and colleagues (Kendall, Kane, Howard, & Siqueland, 1990) developed a 16 to 20 session cognitive-behavioural intervention manual for anxious children (see also Kendall, Chansky et al., 1992). The manual provides a standardised method for treatment implementation while allowing for flexible application. That is, treatment is designed to allow for the individual differences and needs of the child to be met without deviating from main features of the manual. For example, in the choice of *in vivo* exposures and the level of parental involvement (Kendall & Flannery-Schroeder, 1998; Kendall et al., 1990). Since the development of the manual, there have been a number of studies supporting it (Kendall,

1994; Kendall et al., 1997) and related programmes (e.g., family, group, and increased parent involvement: Barrett, Dadds et al., 1996; Flannery-Schroeder & Kendall, 2000; Girling-Butcher & Ronan, 2004, respectively) used with anxious children. The original programme is now discussed, followed by a review of related outcome literature.

The three main goals of Kendall and colleagues intervention are (a) anxiety management, (b) personal distress reduction, and (c) an increase in coping and mastery skills (Kendall et al., 1990; Ronan & Deane, 1998). Treatment is divided into halves. The first half is focused on training sessions in which cognitive, behavioural, and affectively based techniques are learned by the child. Techniques include: (a) recognition of anxious arousal cues, (b) relaxation, (c) imagery, (d) correcting maladaptive self-talk, (e) problem solving, and (f) reinforcement for increased success (self-reinforcement) and planning to cope with failure (realistic self-evaluation). The techniques are taught within an individualised four-step coping plan with an acronym: FEAR. The acronym stands for: Feeling frightened (awareness and identification of physiological cues of anxiety), Expecting bad things to happen (recognising and correcting maladaptive self-talk), Attitudes and actions that can help (coping and problem solving techniques), and Results and rewards (self-evaluating performance and reward/coping with failure). The FEAR acronym helps the child remember and use the steps for coping with distress (Kendall, Chansky et al., 1992). The second half of treatment is focused on practising and using the FEAR plan. New skills are practised through the use of both imaginal and *in vivo* exposure. Situations are increasingly anxiety provoking for the child and are based on an individualised hierarchy developed from the assessment phase and the first half of treatment (Kendall, Chansky et al., 1992).

A number of treatment strategies are utilised to help the child develop the new coping skills. Strategies include (a) coping modelling, (b) role-plays, (c) social and cognitive rewards, (d) homework, and (e) a collaborative therapeutic alliance (Kendall, Chansky et al., 1992; Ronan & Deane, 1998). Concepts and skills are introduced sequentially, progressing in difficulty. In line with the treatment sessions, homework tasks, known as “Show-That-I-Can” (STIC) tasks are a graduated sequence of activities designed to be completed between sessions. STIC tasks are designed to reinforce, maintain, and

generalise skills learnt in session to situations occurring naturally in the child's environment (Kendall, Chansky et al., 1992).

Given the influential role of the family (e.g., modelling and reinforcement of anxious behaviours), parent involvement within child intervention is recommended (Ronan & Deane, 1998). Without appropriate parental monitoring, the maintenance and generalisation of treatment gains may not be achieved. While Kendall and colleagues original CBT programme (discussed above) is essentially child-focused, parents serve an important role, with parents involved in assessment and intervention stages of therapy (Kendall, Chansky et al., 1992). Rather than focus on the dynamics of the family process, therapy aims to involve parents in treatment in an effort to facilitate and maintain the child's progress (Kendall & Gosch, 1994). A parent education style of intervention is formally incorporated in a separate session following session three. During this session, the therapist provides information about the programme, where the child is currently up to, and gathers information regarding parent concerns. The therapist aims to clarify parent expectations for their child and modify unrealistic expectations. Additionally, the therapist encourages parental involvement within the programme and homework tasks. Parents are encouraged to act as coaches and models for their child, helping their child to generalise problem-solving skills across situations outside of sessions. They are asked to prompt their child to use their FEAR or coping plan to manage anxiety-provoking situations. It has also been noted that parents may find the programme useful in managing their own anxious experiences (Kendall & Gosch, 1994). They may be encouraged to use and model the coping strategies taught to the child in their own stressful situations. For a more detailed description of the programme see the *Cognitive-behavioural therapy for anxious children: Therapist manual* (see also Kendall, Chansky et al., 1992; Kendall et al., 1990).

Treatment Research

Multiple studies have established a validated, empirically supported pool of research for Kendall and associates' CBT based interventions with anxious children (e.g., Barrett et al., 2001; Kendall, 1994). In particular, Kazdin and Weisz's (1998) qualitative review of treatments identified Kendall et al.'s (1990) original individual treatment programme and associated family and early intervention programmes (e.g., Barrett, Dadds et al., 1996; Dadds, Spence, Holland, Barrett, & Laurens, 1997) as being empirically

supported. Post-treatment findings indicate significant reductions in the number of participants meeting diagnostic criteria for anxiety, along with significant long-term changes on parent and child measures (e.g., Kendall & Southam-Gerow, 1996).

Further, the programme has been efficacious across studies in the United States (Kendall et al., 1997), Australia (Barrett, Dadds et al., 1996) and, more recently, New Zealand (Girling-Butcher & Ronan, 2004). To provide an empirical foundation for the main study of this thesis, a meta-analytic review (Huzziff, Ronan, & Kazantzis, 2004, see Appendix B) of the programme across an 11-year period (1989-2000) has provided quantifiable support for qualitative assertions made by Kazdin and Weisz (1998). Huzziff et al.'s meta-analysis indicated that children treated with CBT interventions (based on Kendall and colleagues manualised programme) were approximately 90% better off than wait-list children ($ES = 1.21$). Treatment outcome studies specific to the original programme are now reviewed. Outcome findings for associated family and group-based treatment are also briefly reviewed.

Individual-Based CBT

An initial multiple baseline evaluation of Kendall and colleagues' CBT programme was published in 1989 (Kane & Kendall). Kane and Kendall's study of four children (aged 9 to 13 years) diagnosed with an anxiety disorder found treatment to be effective for all four children. All treatment gains were maintained at 3- and 6-month follow-up. Since this initial study, two randomised clinical trials have been conducted (Kendall, 1994; Kendall et al., 1997). Kendall (1994) investigated the programme with 47 children (27 treatment subjects, 20 wait-list; aged 9 to 13 years) diagnosed with a primary anxiety disorder. Results supported the benefits of CBT across gender and race. Sixty-four percent of treated children did not meet diagnostic criteria for an anxiety disorder at the end of treatment. In addition, significant changes on a number of child and parent indices (e.g., reductions in internalising and externalising symptoms, increased coping, reductions in anxiety, depression, negative self-talk) seen at post-treatment were maintained at 1-year follow-up for children in the treatment group. Results also indicated added benefits for comorbid, non-anxiety symptoms (e.g., depression, externalising problems). By contrast, only 5% of the wait-list group were diagnosis free after the wait-list control period and generally did not exhibit any significant changes as measured by self-report, parent, and teacher ratings. Long-term follow-up of 36 children

treated in Kendall's 1994 study indicated that treatment gains continued to be maintained two to five years later (Kendall & Southam-Gerow, 1996)

A second randomised clinical trial (Kendall et al., 1997) of 94 children (60 treatment subject, 34 waitlist; aged 9 to 13 years) again demonstrated significant improvements for children in the CBT condition compared with the waitlist condition. Over 50% of treated children no longer met criteria for a primary anxiety disorder following treatment, and there was a significant reduction in severity scores for children who still met criteria. Treatment gains were maintained at 1-year follow-up. Results supported Kendall's 1994 findings of benefits for CBT across gender and racial groups. Results also indicated that children's age and comorbid status did not impact on treatment outcomes. While there were 11 different therapists conducting the intervention, no treatment gains were observed as a function of therapists, indicating that therapist differences had little impact on treatment outcome.

With regard to overall findings, a recent review (Huzziff et al., 2004) found treatment studies using this treatment modality to be more effective than no treatment for anxious youth. Individual-based CBT was found to effect moderate to large ESs. This finding is comparable with overall ESs found for individual-based CBT studies for anxious youth in general (McMurray & Ronan, 2004).

Family- and Group-Based CBT

Multiple studies have been conducted looking at the additive utility of family components within the programme (e.g., Barrett, Dadds et al., 1996; Girling-Butcher, 2000; Howard & Kendall, 1996) and group administration of the programme (e.g., Flannery-Schroeder & Kendall, 2000; Silverman, Kurtines, Ginsburg, Weems, Lumpkin, & Carmichael, 1999). With regard to increased parental involvement (cf. the original programme), the literature indicates that while the additive utility of parent involvement is initially superior to treatment without a parent component for anxious children, differential effects appear not to be maintained over time. Barrett et al. (1996) modified Kendall and colleagues' (1990) original CBT programme. The modified version reduced treatment sessions from 16-20 down to 12 and incorporated a family anxiety management (FAM) component. The FAM intervention encouraged the parents

and child to work together as an “expert team” to solve anxiety-producing problems (Barrett, Dadds et al., 1996). Barrett et al. (1996) used a clinical sample of 79 children (aged 7 to 14 years), diagnosed with a primary anxiety disorder. Children were randomly assigned to one of three conditions: CBT alone (i.e., Kendall and colleagues’ original programme), CBT plus FAM, or a wait-list condition. Results indicated significant improvements for both active treatment conditions compared with the wait-list condition. While both treatment conditions were effective, overall findings showed CBT plus FAM to be consistently superior to CBT alone, both in reducing anxiety symptoms and obtaining a diagnosis free outcome at 6-, and 12-month follow-up. However, a 6-year follow-up study (Barrett et al., 2001) of 52 participants (now aged 14 to 21 years) treated in Barrett et al.’s (1996) study found CBT and CBT plus FAM to be equally effective. Results found approximately 85% of the sample, regardless of treatment condition, continued to be diagnosis free.

Findings thus far indicate that a family component may enhance treatment in the short-term but no meaningful difference has been found between treatments in the long-term. A recent study (McMurray & Ronan, 2004) investigating the moderater effects of a family component within CBT provides support for such findings. McMurray and Ronan’s study compared CBT treatment studies with (N = 9) and without a family component (N = 17). No significant difference was found between the two treatment modalities. In sum, current findings are unable to conclude whether or not a family component improves treatment (McMurray & Ronan, 2004).

With regard to the use of Group CBT (GCBT), several studies have supported its use for childhood anxiety problems (Albano, Marten, Holt, Heimberg, & et al., 1995; Hayward et al., 2000; Last et al., 1998; Lumpkin, Silverman, Weems, Markham, & Kurtines, 2002; Silverman, Kurtines, Ginsburg et al., 1999). For example, Silverman et al.’s (1999) study of a clinical sample of 56 children (aged 6 to 16 years) diagnosed with a primary anxiety disorder randomly allocated to one of two conditions: GCBT or waitlist. Silverman et al. found significant improvements in treatment outcome for GCBT compared with the waitlist condition. At post-treatment, 64% of the GCBT children were diagnosis free compared with 13% of the waitlist condition children. GCBT gains were maintained at 3-, 6-, and 12-month follow-up. These results are

comparable with results from research focused on individual CBT (e.g., Barrett, Dadds et al., 1996; Kendall, 1994).

Other research has indicated that while GCBT is effective, it may be less effective than individual treatment. For example, Flannery-Schroeder and Kendall's (2000) study of 37 children (aged 8 to 14 years) diagnosed with a primary anxiety disorder found that children in an individual treatment condition demonstrated a higher rate of improvement than those in GCBT. At post-treatment, 73% of individual CBT children no longer met diagnostic criteria for their primary disorder compared with 50% of the GCBT children. Additionally, at post-treatment 64% of individual CBT children no longer met any of the treatment-targeted disorders (i.e., GAD, SAD, and social phobia), compared with 50% of the GCBT children. Results were maintained at 3-month follow-up; 79% of the individual CBT, and 53% of the GCBT children no longer met diagnostic criteria for their primary anxiety disorder.

Recently, a study (McMurray & Ronan, 2004) investigated the moderator effects of individual- versus group-based CBT (N = 14 and 12, respectively). Results found that while individual-based CBT effected more change than GCBT for anxious youth (ES = .77 and .62, respectively), differences were not statistically meaningful.

In sum, the literature indicates that CBT plus family and GCBT have not been shown to be more effective than individual-based treatment. Research thus far supports the use of all three treatment modalities, with findings indicating that the inclusion of a family component may effect more positive change in the short-term, but not the long-term and that GCBT has the potential to be as effective as individual-based CBT.

Comparative Research: BT versus CBT

This section is focused on behavioural versus cognitive-behavioural therapy. While both BT and CBT have been found to be effective in treating childhood anxiety, which treatment components (behavioural or behavioural plus cognitive) are most effective is unclear. To the author's knowledge, no comparative studies have been conducted to specifically investigate how behavioural based treatment compares with cognitive-behavioural based treatment for anxious youth. Comparisons are thus based on

treatment outcome findings for adult-anxiety and other available child research, including recent meta-analyses (Huzziff et al., 2004; McMurray & Ronan, 2004).

Treatment outcome literature comparing BT with CBT for anxious adults has produced variable and inconclusive results (Chambless & Gillis, 1993). A review of comparative adult studies indicate there is little or no difference between the two treatment effects (Chambless & Gillis, 1993). While some studies have found cognitive-behavioural based treatment to be superior to behaviourally-based treatments, others have found the two to be equally effective. For example, Butler and colleague's (Butler, Fennell, Robson, & Gelder, 1991) study of 57 adults with generalised anxiety disorder found superior results for CBT over BT and waitlist conditions. On the other hand, Feske and Chambless' (1995) meta-analysis of the effects of CBT compared with BT for social phobic adults found the two treatments to be equally effective.

Child-based literature indicates some support of the additive utility of cognitive components. Kendall and Braswell (1982) comparative research of CBT versus BT for 27 children (aged 8.5 to 12.1 years), exhibiting self-control problems indicated that CBT was superior to BT. When compared with children in the BT or attention-control condition, children in the CBT condition generally showed significantly greater improvement at post-treatment and 10-week follow-up. Further tentative support for the additive utility of cognitive components in treatment can be seen within CBT studies for childhood anxiety. Cognitive-behavioural treatment studies conducted by Howard and Kendall (1996) and Kendall (1994) provide mid-point assessments allowing the first, cognitive focused half of treatment to be compared with the second, more behavioural focused (exposure) half of treatment. When scores on measures are compared with baseline and pre-treatment measures both studies indicated that following the first half of treatment (8-sessions), a non-significant reduction in parent and child reporting of child anxiety occurred (Howard & Kendall, 1996; Kendall, 1994). Post-treatment results indicated that CBT (as a whole; 16-20 sessions) was clinically effective and/or that there were significant improvements when compared with pre-treatment assessments (Howard & Kendall, 1996; Kendall, 1994). However, while tentative, the meta-analysis has noted no significant differences between the halves of treatment (Huzziff et al., 2004; see Appendix B).

While outcome studies have indicated some tentative support for the additive utility of cognitive components, research investigating specific components directly have been less clear (Alfano, Beidel, & Turner, 2002). Treatment outcome studies have found treatment that have not included cognitive components (e.g., behavioural treatment) to effect change in cognitive symptoms (e.g., Beidel et al., 2000; Silverman, Kurtines, Weems et al., 1999). In addition, Silverman and colleague's (1999) study of children with phobic disorders assigned to either: (a) CM treatment that focused on reinforcement and extinction strategies, (b) SC treatment that focused on self-evaluation and self-talk, or (c) an active-control condition focused on education, found significant changes in cognitive and other symptoms at post-treatment and follow-up regardless of treatment condition. Notably, no differences between groups emerged.

Summary

Of the treatment applications reviewed in this chapter, both behavioural and cognitive-behavioural treatment have provided effective strategies for children and families in reducing unwanted anxiety to more normal and manageable levels. The treatment outcome literature indicates a lack of compelling evidence for the role of cognitive components. The extent to which components increase treatment efficacy for anxious children remains unclear. Further examination of the two primary components (behavioural and cognitive plus behavioural) of an efficacious CBT programme for children is needed to increase understanding of components of change. Increased understanding of the effect of the treatment components could better enable therapists to tailor therapy, increasing efficiency and cost effectiveness.

CHAPTER 6

RESEARCH PROPOSAL

Chapter 6 provides rationale and objectives for the current research. Hypotheses are also presented.

Research Rationale

Cognitive-behavioural and behavioural treatment components have provided effective strategies for children in reducing unwanted anxiety to more normal and manageable levels. While the literature thus far indicates that cognitive components may have a role to play in increasing treatment utility (Kendall & Braswell, 1982), the relationship between treatment components and outcome for anxious children is unclear. The present study addresses the need for increased knowledge of the role of two primary CBT components (cognitive and behavioural).

Of primary interest is Kendall and associates' original CBT programme for anxious children. Outcome literature for this treatment package is well supported for anxious youth. For example, Kendall and associates' CBT programmes have been found: (a) to be more effective than no treatment, a placebo, or an alternative treatment and (b) to be effective, under the conditions of '(a)' across multiple trials, conducted by multiple research teams (Kazdin & Weisz, 1998). Further replication of the programme is needed to increase cross-cultural utility. The first goal was therefore to replicate the programme in a New Zealand context.

In addition, the relative utility of cognitive and behavioural components are highlighted as an area for further research (e.g., Barrett, Dadds et al., 1996; Barrett et al., 2001; Flannery-Schroeder & Kendall, 2000; Huzziff et al., 2004; Kendall et al., 1997). While the cognitive and non-exposure-based behavioural components of CBT appear to effect change, alone they have not demonstrated clinically significant change. Kendall's (1994) study of the effects of CBT with 27 children (aged 9-13 years) diagnosed with a primary anxiety disorder provided mid- and post-treatment assessment findings.

Results found that while positive change occurred following the first eight, cognitive focused sessions, the greatest positive change occurred following the second, exposure-based half of treatment. Results at mid- to post-treatment found significant and clinically meaningful changes, compared with pre- to mid-treatment results (see Chapter 5 for more details regarding this study). Similarly, Howard and Kendall's (1996) study of six children (aged 9-13 years) diagnosed with an anxiety disorder also found the majority of positive change across CBT occurred mid- to post-treatment compared with pre- to mid-treatment. Results of these and related studies (e.g., Silverman, Kurtines, Ginsburg et al., 1999) appear to indicate that the addition of the cognitive and behavioural components of the CBT programme produces meaningful change. What is not clear is what impact the behavioural treatment components of the programme might have if administered without the cognitive components. Given the suggestive findings (Howard & Kendall, 1996; Kendall, 1994), it makes sense to continue to investigate the potential benefits of the behavioural components. The current research investigated whether the behavioural components alone were sufficient to produce meaningful change.

Kendall and colleagues' original CBT programme and associated programmes (e.g., Barrett, Dadds, & Rapee, 1991; Kendall et al., 1990), like other empirically supported child intervention programmes, generally include 12 or more sessions (Koss & Shiang, 1994; Weisz, Thurber, Sweeney, Proffitt, & LeGagnoux, 1997). To date, the number of sessions used in empirically supported CBT programmes for child anxiety is between 12 to 20. However, research indicates that the majority of referred children attend less than 10 treatment sessions prior to termination or dropout (Weisz & Weiss, 1989). Consequently, clinical reality may be that children may not attend treatment for long enough to complete the average empirically supported intervention programme (Weisz et al., 1997). Further, the literature indicates that the majority of treatment impact occurs early on in treatment for most psychotherapy approaches (Koss & Shiang, 1994), generally in the first six to eight sessions. A secondary aim of the current study is to establish if the administration of 8-10 sessions using the behavioural components alone of Kendall and associates original programme can be effective in treating children diagnosed with an anxiety disorder.

In summary, further research into cross-cultural utility is important for establishing the role of Kendall and colleagues' CBT programme within a New Zealand context. Further, the importance of primary treatment components is essential to increase therapist understanding of where treatment change occurs. Given the rate of attrition in psychotherapy, it is also important that research continues to investigate whether briefer forms of therapy can produce significant benefits for children with anxiety disorders. An additional benefit of briefer therapy is the potential for reduced treatment costs.

Summary of Objectives

Objective One

To replicate previous research findings for Kendall and colleagues original 16-session CBT programme within a New Zealand sample using a single-case research design.

Objective Two

To extend previous research findings by dismantling Kendall and colleagues original CBT package. Behavioural components alone were used across 8-10 sessions using a single case design strategy. Doing so was expected to:

- 1) Investigate whether the behavioural components alone were sufficient to facilitate clinically meaningful change for anxious children.
- 2) Increase understanding of the relative importance of behavioural components compared with cognitive and behavioural components within CBT for anxious children.

Objective Three

To establish the long-term effects (3-, 6-, and 12-months) of both treatment packages (CBT and BT) within a New Zealand sample.

Objective Four

While the main focus of the current research was to look at the efficacy of treatment (CBT and BT) for anxious youth, an ancillary objective was to look at potential, secondary treatment effect on parent affect.

Design Rationale

To meet research objectives, the current study used (a) manualised treatment packages and (b) a repeated single-case research design, utilising a multiple-baseline across participants design. The use of manualised treatment packages will be briefly discussed followed by the rationale for single-case research design.

Manualised Treatment

Treatment manuals have come to be seen as an essential feature in current outcome therapy research (Goldfried & Wolfe, 1998). They are designed to provide a comprehensive description of the treatment approach and protocol for therapists to follow (Chambless & Hollon, 1998). A comprehensive manual should include a general description of the intervention principles and phases, plus session by session intervention outlines and identifiable intervention techniques (Dobson & Shaw, 1988).

The use of treatment manuals has received both criticism and support. With regard to criticisms, it has been argued that manuals limit the clinician's creativity (Davidson & Lazarus, 1995, Wilson, 1996, cited in Kendall & Flannery-Schroeder, 1998). However, preliminary data indicates this is not necessarily the case, rather it appears that they provide an essential guide. For example, Schulte, Kunzel, Pepping and Schulte-Bahrenberg (1992, as cited in Kendall & Flannery-Schroeder, 1998) found *standardised* exposure to be significantly more effective than individual-based treatment for specific phobias in adults. Such findings have led the literature to posit that clinician's decisions based on individual characteristics of their clients may not be as clinically beneficial as previously thought (Kendall & Flannery-Schroeder, 1998). Others suggest that manuals may limit the ability to assess the effects of therapist variables, the ability to study the therapy process, and run the risk of increasing research costs (Dobson & Shaw, 1988).

With regard to support, manuals serve a number of important functions. For example, manuals enhance the internal validity and the integrity of research (Chambless & Hollon, 1998; Goldfried & Wolfe, 1998). Designed to ensure therapists adhere to set treatment protocols, they facilitate integrity checks which ensure that the treatment provided is in fact the treatment described (Kendall, Flannery-Schroeder, & Ford, 1999). They facilitate the training process and better enable treatment replication and

comparison across contexts and formats. They eliminate potential confounds such as number and length of sessions, and time between sessions (Dobson & Shaw, 1988). Additionally, research using treatment manuals facilitate the identification of which specific interventions work best with which specific problems (Dobson & Shaw, 1988). In sum, manualised programmes serve an important function for research and therapy.

Single-Case Research Design

In treating participants within an individual framework of single-case design, the current research allows for 'clinical' flexibility of treatment length closing at least some of the gap between research and actual practice. Individual focused research better enables the uniqueness of individuals to be attended to while allowing meaningful clinical changes to be documented. Through improved knowledge about the effects of treatment on individuals, therapist are better able to establish the potential treatment benefits to others (Barlow & Hersen, 1984). Research that is focused on group means, rather than individual differences, can result in difficulties estimating treatment effects for future individuals. The specific effects of treatment on individuals with a particular combination of problems is often lost in the group average (Barlow & Hersen, 1984). In fact, repeated single-case research, when carried out on similar clients, where the same experiment (treatment) is carried out three or four times has been said to have the potential to exceed the experimental group/control group design in terms of external validity (Barlow & Hersen, 1984).

To meet research objective two, the current study was able to use supplementary analyses to compare treatment outcome for the two treatment conditions on selective parameters. However, it is emphasised that comparative analyses were conducted as supplementary. In addition to the repeated case-study design as the primary focus, the expected number of participants ($n = 12$) does not provide sufficient criteria to compare definitively treatment 'groups' in a statistical way. Specifically, the current study lacks statistical power to detect anything but large differences between treatment conditions. Consequently, it should be noted that comparisons across treatment condition within a group framework are not the main intention of the current research. Single case designs are not designed in the first instance to be comparative. Rather, as is the case for the current study, they investigate (a) if treatment works, and (b) information about what components/factors

might make treatment work (Kazdin, 1998). The current study aimed to investigate the effectiveness of behavioural components alone. Given a single case methodology, an induction-generalisation model was used to assess effectiveness as well as differences between treatment conditions in the first instance (see Kazdin, 1998).

Summary of Hypotheses

Hypothesis One

It was hypothesised that results for the CBT condition children would replicate previous research (e.g., Kendall, 1994). The majority of treated children:

- 1) Would no longer meet diagnostic criteria for an anxiety disorder;
- 2) Would have an increased ability to cope and decreased anxiety related problems as measured by self-report and parent- and teacher-report measures; and
- 3) Changes would be maintained at 3-, 6-, and 12-month follow-up.

Hypothesis Two

It was hypothesised that results for the BT condition children would be similar to those found for the children receiving CBT in the current study. The majority of treated children:

- 1) Would no longer meet diagnostic criteria for an anxiety disorder;
- 2) Would have an increased ability to cope and decreased anxiety related problems as measured by self-report and parent- and teacher-report measures; and
- 3) Changes would be maintained at 3-, 6-, and 12-month follow-up.

Hypothesis Three

It was hypothesised that change at post-treatment and follow-up would be comparable across treatment condition:

- 1) A comparable number of children receiving CBT and BT would no longer meet criteria for a DSM-IV-TR anxiety disorder (as measured by the ADISC/ADISC-P);
- 2) Improvements in measures from pre- to post-treatment and at 3-, 6-, and 12-month follow-up would be comparable across treatment conditions.

Hypothesis Four

It was hypothesised that eight to ten sessions of BT would be more effective than the first 8-sessions of CBT alone:

- 1) Children receiving BT would no longer meet diagnostic criteria (as measured by the ADISC/ADISC-P) for an anxiety disorder following the programme. Those who had scored clinically significant scores on measures at pre-treatment would no longer do so at post-treatment; and
- 2) Children receiving CBT would continue to meet diagnostic criteria (as measured by the ADISC/ADISC-P) for an anxiety disorder at mid-treatment (following the first 8-sessions). Those who had scored clinically significant scores on measures at pre-treatment would continue to do so at mid-treatment.

Hypothesis Five

It was hypothesised that parents, regardless of their child's allocated treatment condition, would report gains for themselves. Specifically, it was hypothesised that parents who reported elevated symptoms of anxiety or depression at pre-treatment would report a reduction of their own symptoms at post-treatment.

Summary

This chapter has reviewed the need for increased knowledge about the role of CBT for anxiety in youth in New Zealand. This includes overall effectiveness as well as the relationship between cognitive and behavioural components of treatment and treatment outcome. The purpose of the present study is to investigate these issues. Chapter 7 details the methodology.

CHAPTER 7

METHOD

Participants

Participants included 12 children (4 girls, 8 boys), aged 6 to 12 years, who met DSM-IV (American Psychiatric Association, 1994) criteria for an anxiety disorder as a primary diagnosis. Exclusion criteria included psychosis, use of anti-anxiety or anti-depressant medication, and mental retardation/organic difficulties. While some children ($n = 2$) were noted by teachers to have learning difficulties, all children were estimated to be of average to above average intelligence as indicated on the Teacher Report Form (Achenbach, 1991c).

Forty-one percent ($n = 5$) of the children lived with their mother only, 41% ($n = 5$) with both parents and 17% ($n = 2$) of the children alternated between separated parents in a time share arrangement. Sixty-seven percent ($n = 8$) of children were identified by their parents as being of European descent, 25% ($n = 3$) of European/Maori descent, and 8% ($n = 1$) of Maori descent. Parental level of education ranged, with similar numbers of parents in each treatment condition having completed the Fifth Form (BT: $n = 1$), Sixth Form⁴ (CBT: $n = 2$; BT: $n = 1$), polytechnic ($n = 1$ in each), or university ($n = 3$ in each). Participant social economic status (SES), as measured by parental income varied. Three participants came from low SES backgrounds, two from high SES backgrounds, and the remaining seven from average SES backgrounds.

Table 7.1 provides an overview of participant⁵ variables, including the order in which children presented for an initial assessment, pre-treatment diagnoses (primary diagnosis listed first), and the number of weeks each child waited prior to treatment (baseline). Further, information on the table is divided so that participant data is provided under the treatment programme each child was allocated: cognitive-behavioural treatment or behavioural treatment. A summary of each participant is outlined in Appendix C.

⁴ Fifth and Sixth form are the New Zealand equivalent to grade 10 and 11 in the United States.

⁵ Please note fictitious names have been allocated to children to ensure participant confidentiality.

Measures

To provide a multimethod assessment of child functioning, a trained independent assessor (i.e., not the therapist), the child, and the parent(s) completed a variety of instruments: structured diagnostic interviews, child self-report measures, and parent and teacher ratings. The measures have been used extensively in prior research concerned with the treatment of childhood anxiety (e.g., Barrett, Dadds et al., 1996; Howard & Kendall, 1996; Kendall, 1994; Kendall et al., 1997). Reliability and validity for the measures used are all well established. Normative data specific to New Zealand samples are not currently available for all measures used in the current study; where available it is presented.

Structured Diagnostic Interview

Anxiety Disorder Interview Schedule for DSM-IV: Child Version (ADIS for DSM-IV:C)

The Anxiety Disorder Interview Schedule for DSM-IV: Child Version (ADIS for DSM-IV:C, Silverman, 1987) is a revised version of the original Anxiety Disorder Interview Schedule for Children (ADIS-C, Silverman & Nelles, 1988). The ADIS-C was developed from the adult version, the Anxiety Disorder Interview Schedule (ADIS, DiNardo, O'Brien, Barlow, Wadell, & Blanchard, 1983 cited in Albano & Silverman, 1996). As with the previous child version, the ADIS for DSM-IV:C includes both a child and parent version of the interview schedule. The revised version was designed to be consistent with the DSM-IV (1994) diagnostic classification system, designed to provide a comprehensive diagnosis and aid in the formulation of treatment plans (Albano & Silverman, 1996).

Table 7.1. An overview of CBT and BT participant variables including pre-treatment diagnoses and waitlist periods.

Participant	Ethnic Group	Living Arrangement	Gender	Age (years)	Pre-Treatment Diagnoses	Waitlist (weeks)
<i>Cognitive-Behavioural Treatment</i>						
(02) Eve	European	Mother	Female	12	SAD GAD	3
(03) Matt	European	Both parents	Male	7	GAD SAD Sp P AP	5
(06) Hope	European/ Maori	Mother	Female	12	SAD PTSD	4
(07) Joy	European	Both parents	Female	11	GAD	6
(09) Sid	European	Time-shared	Male	7	SAD GAD SpP	8
(12) Ron	European	Both parents	Male	12	SAD GAD SP	6
Mean age: 10.17 (SD = 2.48)						
<i>Behavioural Treatment</i>						
(01) Carl	European	Both parents	Male	6	SAD	3
(04) Cory	European/ Maori	Both parents	Male	11	SP SAD GAD SpP	3
(05) Job	Maori	Time-shared	Male	9	SAD	8
(08) Rose	European/ Maori	Mother	Female	10	SAD GAD SP	8
(10) Bob	European	Mother	Male	10	GAD SP	7
(11) Sam	European	Mother	Male	9	GAD	6
Mean age: 9.17 (SD = 1.72)						

Note: GAD = Generalised Anxiety Disorder, SAD = Separation Anxiety Disorder, SP = Social Phobia, SpP = Specific Phobia, AP = Agoraphobia without History of Panic Disorder; PTSD = Post-Traumatic Stress Disorder. The primary anxiety diagnosis for each participant is noted in bold. The number in brackets prior to each participant's name shows the order in which children presented for an initial assessment.

The interview schedules (child and parent) are semistructured, designed to allow for differential diagnoses among each of the DSM-IV anxiety disorders. It allows the clinician to rule out alternative diagnoses, and allows for the collection of quantifiable information regarding anxiety symptoms, key criteria, etiology, duration, and intensity. Additionally, the ADIS for DSM-IV:C provides diagnostic sections that enable a comprehensive assessment of affective and externalising disorders commonly comorbid with anxiety (e.g., depression, attention deficit disorder), and screening sections for other childhood problems (e.g., school refusal, substance abuse, psychosis)(Albano & Silverman, 1996).

The interview schedule is administered separately for parents and children. The child and parent interview schedules are similar, following the same format. However, the parent version is more detailed than the child version, asking a greater number of questions in areas such as demographics, history of the problem, and consequences of problem behaviours (e.g., What does your child do when she/he is not in school?). Additionally, the parent interview screens for additional childhood disorders not included in the child interview (e.g., conduct disorder, sleep terror disorder, learning disorders, pervasive developmental disorders).

The formulation of a diagnosis requires that both the child and parent versions be administered. The order of administration, either child first or parent(s) first, is irrelevant as information gained from either interview may not be openly used to prompt or ask about areas not acknowledged by the interviewee. The interview schedule uses a dichotomous format (yes or no) to ask the interviewee about the presence or absence of diagnostic criteria. Additionally, the interviewee is asked to use a nine-point Interference rating scale (0-8) to rate the level of interference that symptoms have presented. The scale is dimensional and is presented in the form of a 'Feelings Thermometer'. Five of the points on the thermometer are anchored with verbal and numeral ratings ranging from *not at all* (0) to *very, very much* (8). When the criteria for a disorder are met, the interviewee is presented the thermometer again, this time to rate the degree to which the disorder interferes with the child's life. The clinician, guided by child and parent reporting, uses the same nine-point scale to make ratings of severity and interference.

To aid the interviewers diagnostic decision making process, a visual diagnostic guide is provided in the form of symptom and criteria tally systems. Check boxes are marked as criteria are met. If minimal criteria are not met, the interviewer discontinues the section and moves on to the next. If minimal criteria are met, or if the interviewer believes that further questioning is warranted, the section continues to be covered.

Following the interviews, individual diagnoses are made based on the child and the parent interviews. Diagnoses are made utilising the diagnostic tally method within sections plus the clinician's severity and interference ratings. The interviewer then uses clinical judgement and the information obtained from the parents and child to determine the primary diagnoses along with additional diagnoses.

The manual (Albano & Silverman, 1996) states the interview schedule is appropriate for use within both clinical and research settings. At a clinical level, the ADIS for DSM-IV:C provides information such as symptom expression, duration, and environmental impacts. Additionally, when administered at the end of treatment, it allows for a quantifiable assessment of change. At a research level, the ADIS for DSM-IV:C allows for a reliable and valid diagnosis. Additionally, it reduces errors that may otherwise result from method, informant, and interviewer effects (Albano & Silverman, 1996). The use of this measure by childhood anxiety researchers has increased due its high reliability, its structure that helps to enhance rapport, and its ability to produce specific, comprehensive information about the child's functioning (e.g., treatment outcome results. See also Ronan, 1996).

Interrater reliability has been shown to be high. Silverman and Nelles (1988), using an interviewer-observer paradigm investigated interrater reliability using 51 outpatients at an anxiety specialty clinic in the United States. Kappa coefficients ranged from .64 for Overanxious Disorder to 1.00 for Specific Phobia. The overall Kappa coefficient was .75 ($p < .01$). Other research (e.g., Kendall, Kortlander, Chansky, & Brady, 1992) has confirmed acceptable diagnostic reliability. Findings are also supported cross-culturally. For example, Rapee, Barrett, Dadds, and Evans' (1994) study of 161 outpatient children at an anxiety specialty clinic in Australia found acceptable interrater reliabilities.

Test-retest and interrater reliability over time is also good for the ADIS-C (child and parent versions). Silverman and Eisen (1992) study of 50 outpatient children at a specialty clinic in the United States and their parents have indicated good symptom, diagnostic, and interrater reliabilities over a 10 to 14 day period. Silverman and Eisen (1992) used two separate interviewers to assess children and their parents – one interviewer completed initial assessments, and the second interviewer completed 10-12 day retest assessments. Kappa coefficients were used to establish test-retest reliability, and Pearson-product moment correlations were used to establish symptom stability and interrater agreement on severity ratings. Overall Kappa coefficients for child and parent interviews were acceptable (.79 and .67, respectively). Composite diagnoses reliability was high (.73 to .84). Overall, child and parent interview symptom score reliabilities were also adequate ($r = .71$ and $.72$, respectively). Pearson product-moment correlations for interrater agreement of severity ratings for primary diagnosis based on child, parent, and composite scores were .89, .87, and .88, respectively.

Criterion validity of the measure is implicitly established in that the measure is developed in accordance with DSM-IV (1994) criteria. As stated above, the measure is organised diagnostically in accordance with DSM-IV. Thus, to make a diagnosis, minimal criteria according to DSM-IV must be met. Silverman and Eisen (1994, cited in Silverman, 1994) provide evidence of reasonable concurrent validity. Ninety children diagnosed with the ADIS-C and ADIS-P were noted to have significantly higher Child Behaviour Checklist (Achenbach & Edelbrock, 1983 cited in Silverman, 1994) scores on sub-scales that were predominantly internalising in nature (e.g., anxiety/depression and somatic complaints)(Silverman, 1994). Additionally, the ADIS-C and ADIS-P have been shown to be sensitive to treatment effects in studies investigating youth with anxiety disorders (e.g., Flannery-Schroeder & Kendall, 2000; Kendall, 1994; Kendall et al., 1997).

Children's Self-Report Measures

State-Trait Anxiety Inventory for Children (STAIC)

The State-Trait Anxiety Inventory for Children (STAIC, Spielberger, 1973), is a 40-item self-report measure designed to measure state- and trait-anxiety (A-State and A-Trait) in children aged 9 to 12 years. It is similar in conception and structure to the

State-Trait Anxiety Inventory (STAI, Spielberger, Gorsuch, & Lushene, 1970) designed for adolescents and adults. For more details on the STAI, see parent self-report measures below.

The A-State scale is a 20-item measure designed to assess transitory levels of subjective situational based anxiety that varies across time. It consists of 20 statements that ask children how they feel 'right now'. The A-Trait is a 20-item measure designed to assess relatively stable, enduring tendencies to experience anxiety. It consists of 20 statements asking children how they 'generally' feel. Items for the STAIC are presented in a forced choice format. Items are either scored 1, 2, or 3 with increased scores indicating increased self-reported anxiety. Total scores for A-State and A-Trait range from 20 to 60 (Spielberger et al., 1973).

Reliability and validity data are available in the *STAIC Preliminary Manual* (Spielberger, 1973). Alpha reliabilities are acceptable (A-State = .82 to .87, A-Trait alpha .78 to .81)(Spielberger, 1973). While test-retest correlations for the A-State are low (.31 to .47) compared with A-Trait (.65 to .71), these are to be expected due to the transitory nature of state anxiety (Spielberger, 1973).

Moderate to strong concurrent validity has been found for A-Trait and other commonly used measures of trait anxiety. Platzek (1970, cited in Spielberger, 1973) found the A-Trait scale correlated .75 with the Children's Manifest Anxiety Scale (CMAS, Castaneda et al., 1956). A similar correlation of .85 has been found with the Revised-CMAS (RCMAS, Reynolds, 1980; Reynolds & Richmond, 1985); .63 with the General Anxiety Scale for Children (GASC, Sarason, Davidson, Lighthall, Waite, & Ruebush, 1960 cited in Spielberger, 1973).

Construct validity has been demonstrated. The *STAI Preliminary Manual* (Spielberger, 1973) reports adequate convergent validity for the A-State when comparing 900 fourth-, fifth-, and sixth-graders across two situations: test conditions and normal conditions. Markedly higher scores were observed for the test condition (males, 41.74; females, 43.76) compared with the normal condition (males, 31.10; females, 31.03). Additionally, each item on the scale was able to significantly discriminate between the two conditions.

More recently divergent validity has also been established. Hodges (1990) used a three-way ANOVA including conduct disorder, depression, anxiety, and a two-way ANOVA including depression and anxiety and observed a significant main effect for the STAIC-T for anxiety disordered children only. Additionally, compared with non-anxiety disordered children, anxiety disordered children scored significantly higher on the STAIC-T, with a relatively large effect size ($d = .77$).

Additional construct validity has been supported via factor analyses. The STAIC A-State is similar in nature to that of the STAI in that 10 of the statements indicate anxiety is present, and the remaining 10 that anxiety is absent. The STAIC A-Trait differs to the State scale in that items are not directional. All but one of the 20 items describes the presence of anxiety. Given this, three factors are thought to exist: A-State anxiety-present, A-State anxiety-absent, and A-Trait. Five STAIC factor analytic studies (Carey, Faulstich, & Carey, 1994; Cross & Huberty, 1993; Dott, 1981; Hedl & Papay, 1982; Kirisci, Clark, & Moss, 1996) investigating factors across a variety of child categories (i.e., substance abusers, grades 9-12, grades 7-8, kindergarten to grade four, and grades 4-6) provide strong evidence for the state-trait distinction and the existence of the three factors. An earlier study by Gaudry and Poole (1975, cited in Hedl & Papay, 1982) has indicated that there may be additional factors. However, this research had multiple methodological flaws (Hedl & Papay, 1982). For example, the researchers did not check data for alternative solutions and parsimony.

Normative data has been provided for children aged 9 to 12 years and are available in the STAIC Manual (Spielberger et al., 1973). A total of 1551 children (737 male and 814 female) from varying socio-economic and ethnic backgrounds in Florida were used. For scoring purposes grade, normalised t -scores (mean = 50; SD = 10), and percentile ranks are provided by gender and by grade in the STAIC Manual. Third grade reference points for children aged 8 to 9 years, in the form of means and standard deviations (Papay & Hedl, 1978 cited in Papay & Spielberger, 1986). First to second grade norm reference points for children aged 5 to 8 years, in the form of means and standard deviation are also available (Papay & Spielberger, 1986). Comparative normative data has been found within New Zealand samples. For example, Ronan's (1997) study of 118 New Zealand children (aged 7 to 15 years) following a benign disaster (volcanic

eruptions) found children who did not meet PTSD symptom cluster scores on the A-Trait and A-State reported comparable scores to relevant normative samples.

While the STAIC was developed specifically for the assessment of anxiety in children aged 9 to 12 years, Spielberger (1973) states the measure is also appropriate to use with younger children with average or above average reading ability, or with older children (e.g., Ronan, 1997). Research by Papay and Spielberger (1986) indicate that the STAIC is also a valid measure for second and third graders (ages 7 to 9), and if individually administered, first graders and children in kindergarten (i.e., ages 5 to 6). Further, the STAIC has been found to be sensitive to treatment effects (e.g., Kendall, 1994).

Revised Children's Manifest Anxiety Scale (RCMAS)

The Revised Children's Manifest Anxiety Scale (RCMAS)(Reynolds & Richmond, 1985) is a 37-item self report measure designed to measure trait anxiety in children aged 6 to 19 years. The RCMAS is a simplified, shorter version of the original Children's Manifest Anxiety Scale (CMAS, Castaneda et al., 1956), with an expanded age range. Like the CMAS, the RCMAS provides a total anxiety scale plus three empirically derived anxiety subscale scores: Physiological Anxiety, Worry/Over-sensitivity, and Social Concerns/Concentration. It also includes a Lie scale. The Lie scale is designed to measure social desirability, acquiescence, or faking good responses. Factor analytic studies of the RCMAS consistently support the general anxiety score and subdivisions of the measure. For example, factor analyses using the responses from the original development sample, the standardisation sample, learning disabled children, and gifted children all support the concept of a general trait anxiety factor as well as the subdivision of factors within the measure (Paget & Reynolds, 1984; Reynolds, 1985; Reynolds & Paget, 1981; Reynolds & Richmond, 1978).

Children are required to respond to each of the 37 items by marking either a 'yes' or 'no' response to statements of *'what I think and feel'*. The total Anxiety scale of the RCMAS is made up of 28 items: 10 Physiological Anxiety items, 11 Worry/Oversensitivity items, and seven Concentration Anxiety items, leaving nine items to form the Lie scale. Each of the anxiety items represents a description of actions and feelings that embody an aspect of anxiety. All items are positively keyed. Scores on

the Anxiety and Lie scales are calculated by counting “yes” responses. Total scores for the Anxiety scale range from 0 to 28, and for the Lie scale, 0 to 9.

The RCMAS has shown adequate reliability and validity. Internal consistency as measured by coefficient alpha is in the .80 range across all age, gender and ethnic groups with few exceptions (i.e., African American females at certain ages). In terms of subscales, the Physiological Anxiety and Concentration Anxiety subscale reliabilities are in the .60 or .70 range though occasionally fall below .60. The Worry/Over-sensitivity subscale and Lie Scale are generally in the .70 or .80 range (Reynolds & Richmond, 1985). Other research (e.g., Ronan, 1997) has confirmed internal stability in a New Zealand sample. Long-term stability of test scores is indicated by reasonable test-retest coefficients. The RCMAS manual (Reynolds & Richmond, 1985) reports retest reliability coefficients over a three-week interval to be in the .90 range. Wisniewski, Mulick, Genshaft, and Coury (1987) found similar results. A retest study across one- and five-weeks of 161 children (73 males and 88 females) in grades six to eight (aged 11 to 14 years) provided correlations of .88 (1-week) and .77 (5-weeks). All subscale correlations fell in the .60 to .80 range. Retest results over longer periods, while lower, are reasonably stable. Reynold’s (1981) study of 534 children in grades four to six (aged 9 to 12) across a nine-month period indicated a correlation of .68 for total anxiety and .58 for the Lie scale.

The RCMAS has demonstrated adequate concurrent validity. The RCMAS is highly correlated with the STAIC Trait scale and only marginally correlated with the STAIC State scale (Reynolds, 1980, 1982, 1985). These findings also provide convergent and divergent validity, supporting the construct validity of the RCMAS as a measure of manifest trait anxiety, independent of state anxiety. Construct validity has also been demonstrated in factor analytic studies (e.g., Dorr, 1981; Hedl & Papay, 1982). Further, the RCMAS has been found to be sensitive to treatment effects (e.g., Barrett, Dadds et al., 1996; Kendall et al., 1997).

Normative data has been provided using 4972 children aged 6 to 19 years (2,493 male, 2,472 female and approximately 10% African American) from varying socio-economic backgrounds, and representing all regions of the United States (Reynolds & Paget, 1983). The data provides separate norms for males and females at each age level from 6

to 16 years, for gender-by-ethnicity (black and white), for the total Anxiety scale, for the three subscales, and the Lie scale. For scoring purposes the age level, separate gender by ethnic group, and collapsed gender ethnic *T* scores are provided for the total Anxiety scale, and scaled scores for each of the three sub-scores and the Lie scale. The total anxiety mean *T* score is 50 and has a standard deviation of 10. The scaled scores have a mean of 10 and a standard deviation of three.

Fear Survey Schedule for Children-Revised (FSSC-R)

The Fear Survey Schedule for Children-Revised (FSSC-R)(Ollendick, 1983) is an 80-item scale designed to assess specific fears in children aged 7 to 18 years. The FSSC-R was developed from the FSSC (Scherer & Nakamura, 1968), which was originally developed from adult fear survey schedules (i.e., Geer, 1965, and Wolpe & Lang 1964 cited in Ollendick, 1983). Ollendick (1983) revised the FSSC to take into consideration the cognitive and developmental limitations of young children in addition to children who are mentally retarded or psychiatrically impaired.

The FSSC-R asks children how much they fear particular things, places, or situations (e.g., ‘bats’, ‘being alone’, ‘taking a test’). The FSSC-R uses a forced choice three-point scale format (‘none’, ‘some’, or ‘a lot’). Items are either scored 1, 2, or 3 with increased scores indicating an increased number and level of fears. Total scores range from 80 to 240.

The FSSC-R has shown evidence of internal stability. For example, Ollendick’s (1983) study of 242 children (217 ‘normal’, 25 school phobic) found coefficient alphas ranging from .92 to .95. Similar internal consistencies have been shown across samples with physical and intellectual disabilities (King, Josephs, Gullone, Madden, & Ollendick, 1994).

Stability of test scores across time has also been supported. Ollendick’s (1983) study of 99 children (aged 8 to 11 years) found stability to be evident over a 1-week interval ($r = .82$). A second study of 118 children found moderate stability across a 3-month interval ($r = .55$)(Ollendick, 1983).

Moderate to strong concurrent validity is evidenced by comparisons with STAIC-Trait ($r = .64$) with increased fears indicating an increase in trait anxiety levels (McCathie & Spence, 1991). The measure has also been found to discriminate between teacher nominated children who are 'most' and 'least fearful' (McCathie & Spence, 1991).

Construct validity supports a five-factor structure: fear of failure and criticism, fear of the unknown, fear of minor injury and small animals, fear of danger and death, and medical fears. Multiple studies have indicated that while some minor variations exist within the specific factors (e.g., Ollendick, 1983; compared with Scherer & Nakamura, 1968), the overall structure is valid (McCathie & Spence, 1991; Ollendick, 1983; Ollendick & King, 1991; Ollendick et al., 1989) and stable across gender, age and some nationalities (Ollendick et al., 1989).

Normative data are available regarding general gender and age differences for children. Ollendick and colleague's (1985) study of 126 children (66 girls and 60 boys) aged 7 to 18 years showed that girls report significantly more fears (mean = 16.14) compared to boys (mean = 8.28) and a greater intensity of fears (mean = 143.90; SD 24.10) compared to boys (mean = 124.90; SD 23.80). There is also a relationship between age and fear number with younger children, aged 7 to 12 years (mean number = 14.23 to 13.64, respectively) reporting a greater number of fears than older children, aged 13 to 18 years (mean number = 12.08 to 11.55, respectively)(Ollendick et al., 1985).

Further normative research by Ollendick et al. (1989) has provided similar findings. Ollendick et al.'s (1989) study of 1185 children (594 United States and 591 Australian; 572 girls and 613 boys) aged 7 to 16 years indicated significant differences between both the number of fears and intensity of fears across gender and age (but not nationality). On average, girls reported 18 fears while boys reported 10. Younger children reported more fears than older children. The mean fear prevalence for younger to older children ranged from 17 to 12, respectively. Overall, the mean number of fears reported was 14⁶. Further, the FSSC-R has been found to be sensitive to treatment effects (e.g., Barrett, Dadds et al., 1996; Kendall et al., 1997).

⁶ The article does not provide standard deviation scores for mean scores.

Children's Depression Inventory (CDI)

The Children's Depression Inventory (CDI)(Kovacs, 1992), is a 27-item scale designed to assess cognitive, affective, and behavioural symptoms of depression in children and adolescents aged 7 to 17 years. The CDI was modelled after the Beck Depression Inventory (BDI, Beck, 1967, cited in Kovacs, 1992, see also Parent Measures below).

For each of the 27 CDI items, children are asked to endorse one of three sentences that best describes their feelings and thoughts during the past two weeks. Items are presented in a forced choice format. Items are either scored 0, 1, or 2, with increased scores indicating increased self-reported depression. Total scores on the CDI can range from 0 to 54. The CDI also provides five subscale scores: Negative Mood, Interpersonal problems, Ineffectiveness, Anhedonia, and Negative Self-esteem.

Reliability of the CDI is adequate. Kovacs (1992), using a normative sample (n = 1266, aged 7 to 15 years), reported a Cronbach's alpha of .86. The reliability of the CDI has also been established across various populations. Kovacs (1992) summarised internal consistency across seven studies on nine different population samples. The alpha coefficients ranged from .71 to .89, with the majority of the studies reporting alpha values over .80. For example, Kovacs (1985) found the total CDI score coefficient alpha to be .86 with a heterogeneous, psychiatric referred sample of children (n = 75), .71 with a paediatric-medical outpatient sample (n = 61), and .87 with a public school student sample (n = 860). Subscale alpha reliabilities have also been established. Sitarenios and Kovacs (1999), using the CDI normative data sample (n = 1266) and an independent sample of children (n = 894) established alpha reliabilities were moderate, ranging from .59 to .68, satisfactory for subscales. Internal stability has also been found to be adequate in New Zealand research (Ronan, 1997).

Stability over time is moderate to high. Kovacs (1992) reports results from multiple studies, with test-retest reliability ranging between .56 to .87 across 2- to 4-week periods; .41 to .69 across 6-weeks to 1-year. A greater level of test-retest scores beyond 4-week period is expected as the CDI measures state symptoms rather than traits.

Criterion validity for the CDI is acceptable. The CDI manual (Kovacs, 1992) has reported concurrent validity. For example, Green's (1980, cited in Kovacs, 1992) study of 630 children found self-esteem scores (as measured on the Coopersmith Inventory) to be highly correlated with CDI scores. Correlations coefficients were .67 for boys and .72 for girls ($p < .0001$). Friedman and Butler's (1979, cited in Kovacs, 1992) study of 928 children reported similar correlations for the CDI with the short version of the Piers-Harris Children's Self-Concept scale ($r = .66, p < .001$).

Additional construct validity has been demonstrated. Saylor, Finch, Spirito, and Bennett (1984) investigation of multiple CDI studies has indicated that the CDI can discriminate between children with general emotional distress from 'normal' school children. Factor analyses have generally identified three (Carey, Faulstich, Gresham, Ruggiero, & Enyart, 1987 cited in Kovacs, 1992) to eight (Saylor, Finch, Spirito, & Bennett, 1984 cited in Kovacs, 1992) factors embodied within the CDI. Despite such variation, most studies (e.g., Weiss & Weisz, 1988 and Weiss, Weisz, Politano, Carey, Nelson, & Finch, 1991 cited in Kovacs, 1992) have identified one major factor that accounted for the majority of the variance. Kovacs's (1992) selected the five factors, representing the subscales that she reported allowed for the most parsimonious interpretation of the factor structure: negative mood, interpersonal problems, ineffectiveness, anhedonia, and negative self-esteem.

Of the childhood depression inventories, the CDI is reported to have the best normative data available (Kendall, Cantwell, & Kazdin, 1989). Since the development of the CDI in 1977, the CDI has undergone extensive psychometric examination of normal and clinical child populations. The CDI Manual (Kovacs, 1992) provides gender and age norms for North American children. Comparative normative data has been found within New Zealand samples. For example, Ronan's (1997) study of New Zealand children (aged 7 to 15 years) found 'normal' children's scores on the CDI did not differ from those of the relevant manual-based normative samples.

For scoring purposes, the manual (Kovacs, 1992) provides normalised *T*-scores for the Total CDI and each of the subscales across two age groups (7 to 12 and 13 to 17 years) and gender. When using the measure in a clinical setting, *T*-scores above 65 are generally considered clinically significant. It should also be noted that, as with the adult

version of this measure (i.e., BDI), the CDI is designed to be used in conjunction with clinical and structured interviews (e.g., the ADISC) when determining a diagnosis of depression, and not on its own. The CDI has been shown to be sensitive to treatment effects (e.g., Kendall et al., 1997).

Negative Affect Self-Statement Questionnaire (NASSQ)

The Negative Affect Self-Statement Questionnaire (NASSQ)(Ronan et al., 1994) was designed to assess areas of cognitive, anxious, and depressed self-statements in relation to negative affect in children aged 7 to 15 years. The questionnaire is divided into two separate age defined scales. The NASSQ for children 7 to 10 years contains 14 items; for children 11 to 15 years, 39 items. For each of the items, children are asked to rate the occurrence of self-statements over the past week using a forced choice scale ranging from 1 (not at all) to 5 (all the time). For scoring purposes, four items are reversed. Increased scores indicate increased negative affect.

This measure has demonstrated adequate reliability. For example, Ronan et al.'s (1994) study of 545 children (aged 7 to 15 years) has provided alpha reliabilities of .89 and .96 (NASSQ 7-10 and 11-15, respectively). Their study also provided test-retest reliability coefficients across a two-week period of .96 and .78 (NASSQ 7-10 and 11-15, respectively). Kendall et al. (1997) reports similar findings across a 2-month period for the two age groups combined ($r = .73$).

Construct validity has been demonstrated. The NASSQ is comprised of three sub-scales: Anxiety Specific (AS), Depression Specific (DS) and Negative Affect (NA). The NASSQ 7-10 contains 11 AS items and 3 DS items, while the NASSQ 11-15 contains 21 AS items, 8 DS items, and 10 NA items. An analysis of variance by Ronan et al. (1994) provides support for both the age-differentiated subscales and for the subscales themselves. Anxious and non-anxious groups differed on item response to AS items as did depressed and non-depressed on the DS items. Anxious and depressed groups differed on AS and DS item responses. Additional support is provided in a more recent factor analysis (Lerner, Safren, Henin, Warman, Heimberg, & Kendall, 1999) that also indicated validity for the subscales.

Adequate concurrent validity has been established. The Ronan et al. (1994) study of 545 children (aged 7 to 15 years) found that the NASSQ was significantly correlated with the STAIC-T, RCMAS, and the CDI, regardless of age. The total NASSQ score correlations with the criterion inventories ranged from .62 to .74. Subscale correlations with criterion inventories ranged from .47 to .70. The NASSQ has also shown specific sensitivity to treatment effects (Kendall, 1994; Ronan et al., 1994; Treadwell & Kendall, 1996).

Coping Questionnaire - Child (CQ-C)

The Coping Questionnaire - Child (CQ-C)(Kendall, 1994), is a three-item questionnaire designed to assess changes in children's perceived ability to cope with specific, highly anxiety provoking circumstances. The measure is made up of three situations identified by the child and parent(s) during diagnostic interviews as most concerning.

The CQ-C asks children to rate their ability to cope with specified situations on a forced choice seven-point scale ranging from one (not at all able to help myself) to seven (completely able to help myself feel comfortable). The rating scale is explained to children before they complete the measure. Children are asked to complete a practise question with the assessor's guidance to ensure understanding prior to completing the situation specific questions. To score the measure, the mean score of the three items is calculated. The total mean score may range from one to seven, with increasing scores reflecting an increase in perceived coping ability.

The measure has been shown to have acceptable internal stability (.70, Ronan & Kendall, 1997).⁷ Kendall's (1994) study provided a test-retest reliability coefficient of .46 for 20 children (aged 9 to 13 years) across a two-month, waitlist period. Children's CQ-C post-treatment scores have also been shown to improve significantly as a function of treatment (Kendall, 1994).

For the purposes of the current research, a fourth question was added to the CQ-C prior to treatment to assess treatment expectations. The question asked children to rate how much they thought the treatment programme would help them cope generally. The

⁷ The three items here were standardised to allow for school-based administration of the measure following a stressful event.

question was then altered at the end of treatment and follow-up assessments to then ask children how much they think the programme *has* helped them.

Parent Measures

STAIC – Modification of trait version for parents (STAIC-T-P)

The STAIC – Modification of trait version for parents (STAIC-T-P)(Strauss, 1987b) is a 26-item measure designed to assess the parent’s perception of their child’s trait anxiety. The STAIC-T-P is a modified version of the STAIC A-Trait, designed for use as a complementary rating of child trait anxiety. Parents are asked to rate the frequency which 26 statements apply to their child. Items are presented in a forced choice format requiring parents to choose whether the statement hardly-ever, sometimes, or often is true for their child. Items are scored 1, 2, or 3 respectively, with increased scores indicating increased anxiety. Total scores for the measure range from 26 to 78.

The STAIC-T-P has adequate psychometric properties (Kendall & Southam-Gerow, 1996). Kendall (1994) states Strauss’ (1987) modification of the measure has good discriminant validity. Further, while no normative data is available, previous research has found it to be a useful measure of child anxiety, particularly with regard to assessing anxiety in children who may be underreporting, and for assessing treatment outcome effects. For example, Flannery-Schroeder & Kendall’s (2000) study found anxious children (aged 8 to 14 years) who reported notably different levels of anxiety compared with parents at pre-treatment, reported similar levels as post-treatment, indicating possible underreporting at pre-treatment. The STAIC-T-P has also been found to be sensitive to treatment across multiple studies (e.g., Flannery-Schroeder & Kendall, 2000; Kendall, 1994).

Coping Questionnaire – Child: Parent version (CQ-P)

The Coping Questionnaire – Child: Parent version (CQ-P)(Howard & Kendall, 1996) parallels the child version of the Coping Questionnaire scale (CQ-C; see the previous Children’s Self-Report measures section) and is used to measure change in parent perceptions of their child’s coping with anxiety provoking situations. Parents are required to rate their child’s ability to cope with the same three individualised anxiety provoking situations used in the CQ-C. Ratings are conducted with the use of a forced

choice, seven-point scale ranging from one (not at all able to help him/herself) to seven (completely able to help him/herself feel comfortable). Scoring of the CQ-P is the same as the child version with the mean score of the three ratings used to provide a total score. Total scores can range from one to seven, with increased scores reflecting an increase in the parent's perception of their child's coping ability. As with the CQ-C, the research using the CQ-P (e.g., Kendall & Southam-Gerow, 1996) found post-treatment scores improved significantly as a function of treatment.

Child Behaviour Checklist/4-18 (CBCL/4-18)

The Child Behaviour Checklist/4-18 (CBCL/4-18) (Achenbach, 1991b) is designed to assess, in a standardised format, parent's reports of a variety of social competencies and behaviour problems in children aged 4 to 18 years. The CBCL/4-18 is a revised-version of the original CBCL (Achenbach & Edelbrock, 1983 cited in Achenbach, 1991b).

The CBCL/4-18 is made up of two major sections: social or adaptive competencies, and behaviour problems. Social competencies are evaluated via 20 items that assess the level and quality of involvement the child has in activities such as sports, hobbies, friendships, and social organisations. Competence items are used to calculate three subscale scores: Activities, Social Interactions, and School, as well as a Total Competence score. The 118 behaviour problem items provide scores for the following scales: Total Problems, Internalising, Externalising, Withdrawn, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Attention Problems, Delinquent Behaviour, and Aggressive Behaviour. Parents are asked to rate their child on the problem behaviours in the past six months using a three-point forced choice scale. Items are scored zero (not true) to two (very true or often true). The six-month baseline, as opposed to the two-month baseline used for the teacher version (see below), is intended to identify low occurrence behaviours like running away from home and suicide attempts that are more likely to be identified by parents than teachers.

The CBCL/4-18 is scored using gender-specific profiles that provide age specific rating indices (6-11 years and 12-18 years). The profile provides raw scores for each scale, plus percentiles and normalised *T*-scores based on sex in each age range (Achenbach, 1991b). Additionally, the Behaviour Problems section of the measure provides two broadband behavioural factors: internalising (e.g., withdrawn, anxious, depressed) and

externalising (e.g., aggression, impulsivity). The Internalising score is obtained via summing the raw scores of the Withdrawn, Somatic Complaints, and Anxious/Depressed scales. The Externalising score is obtained via summing the raw scores of the Delinquent Behaviour and Aggressive Behaviour scales. For the purpose of analysis in the current study, Internalising and Externalising scores, and the Anxiety/Depression and Somatic scales were used.

The checklist competency and problem scales have adequate interrater stability and show stability over time (Achenbach, 1991b). Achenbach reported interrater correlations between three interviewers for competence and Problems scores in the .90 range (e.g., .93 for the competency items; .96 for the 118 specific problem items). He also reported good inter-parent correlations. Correlation coefficients ranged from .74 to .76 for competency scales and .65 to .75 for problem scales ($n = 599$, $p < .01$).

Achenbach (1991a) found mean test-retest reliabilities across a 1-week period were .87 for competence scales and .89 for problem scales ($p < .001$, $n = 80$). Marginal declines in scale scores, considered “practice effects,” were noted across a 1-week period. Given this, the manual recommends at least a two-month interval between admissions.

Stability has been found across longer periods of time. For example, Achenbach, Phares, Howell, Rauh, & Nurcombe’s (1990, cited in Achenbach, 1991b) study of 141 low and normal birth weight children (aged 6 to 8) across one and two-year intervals found mean reliabilities of .62 and .56 (respectively) for competency scales and .75 and .71 (respectively) for problem scales.

As with reliability data, the CBCL/4-18 manual (Achenbach, 1991b) provides extensive information regarding validity of the CBCL/4-18. The measure is significantly correlated with comparable scales providing adequate concurrent validity. For example, the CBCL broadband and problem scales, and total problem scores are significantly correlated with the Conners Parent Questionnaire (.59 to .86), and the Quay-Peterson Revised Behaviour Checklist (.52 to .88)(Achenbach, 1991b). Further, the CBCL Internalising and Externalising scales have been found to be sensitive to treatment effects (e.g., Barrett, Dadds et al., 1996; Kendall et al., 1997).

Normative data are provided based on large samples of children aged 4-18 years from multiple ethnic, socio-economic and urban/rural groups. Normalised *T*-scores and cutoff

points indicative of normal, borderline and clinical functioning are provided for each of the scales. *T*-Scores of less than 65 are within the normal range and scores of 67 or higher in the clinical range. The CBCL/4-8 manual provides both extensive normative data and detail regarding normative data development for all scales.

Parent Self-Report Measures

State-Trait Anxiety Inventory - Trait (STAI-T)

The State-Trait Anxiety Inventory - Trait (STAI)(Spielberger et al., 1970) is a self-report measure which has been used extensively in both research and clinical practice (Spielberger, 1983). Like the STAIC, the STAI has two separate scales that assess state (STAI-S) and trait (STAI-T) anxiety, both of which are made up of 20-items. The STAI-T version is a 20-item, self-report measure designed to measure adolescent's and adult's enduring tendencies to experience anxiety. It consists of 20 statements asking respondents to rate how they 'generally' feel using a forced choice scale ranging from 1 (almost never) to 4 (almost always). Approximately half of the items are positively keyed, and half negatively keyed to prevent response bias. Total scores for the STAI-T range from 20 to 80 with increased scores indicating increased levels of anxiety.

Adequate reliability data exists for the STAI-T. For example, support for internal stability is available across nationalities. Knight, Waal-Manning, and Spears' (1983) study, using a normative sample of 1173 New Zealanders (aged 16 to 89 years), found an alpha coefficient of .87 for the STAI-T.

The stability of the STAI-T is adequate. Spielberger (1983) reports high test-retest reliability coefficients. For example, test retest stability (correlation coefficient) for United States high school and college students ranged from .71 to .86 across a one month interval, and .65 to .77 across a two month interval. Further test-retest reliabilities across a 104-day period using college students only, ranged from .73 to .77.

Validity has also been demonstrated. It is important to note first the validity of the STAI subscales: STAI-T and STAI-S. The distinction between trait anxiety as a relatively stable, enduring part of a personality disposition, and state anxiety as a transitory, situational based anxiety that varies across time has been established for over

40 years (Cattell & Scheier, 1961, cited in Spielberger, 1983). This distinction has also been supported via factor analyses. For example, a review (Spielberger, Vagg, Barker, Donham, & Westberry, 1980) of seven factor analytic studies found that the two scales consistently loaded on different factors differentiating Trait from State anxiety.

The STAI-T scale has demonstrated discriminant validity. Spielberger (1983) found that compared with a normal sample ($n = 5081$), ‘neuropsychiatric’ patients ($n = 461$) experiencing anxiety as a major symptom reported substantially higher mean scores on the STAI-T. Additionally, the STAI-T scores enabled the discrimination between non-psychiatric patients with emotional problems and general medical and surgical patients (Spielberger, 1983). Adequate levels of concurrent validity have also been established. The STAI-T has been highly correlated with other measures of trait anxiety (e.g., Taylor Manifest Anxiety Scale and the IPAT Anxiety Scale) with correlation coefficients ranging from .73 to .85 (Spielberger, 1983).

For scoring purposes, the *State-Trait Anxiety Inventory for Adults* manual (Spielberger, 1983) provides norms across multiple populations (e.g., working adults, university students, high-school students). Normalised *T*-scores are available for working adults and are based on data collected from 1838 adults from the United States (1387 males and 451 females). These *T*-scores are gender-specific and provide norms across three chronological groups: 19-39, 40-49, and 50-69. Additional normative data are provided for working adults and the other groups (e.g., standard scores, percentile ranks, and means and standard deviations). Comparative normative data has been provided based on New Zealand samples. Knight et al.’s (1983) study of 1173 New Zealanders (aged 16 to 89 years) found STAI-T scores comparable to those in the manual.

Beck Depression Inventory – Second Edition (BDI-II)

The Beck Depression Inventory – Second Edition (BDI-II) (Beck, Steer, & Brown, 1996) is a 21-item scale designed to measure the severity of depression in adults and adolescents (13 years and over). The BDI-II is a substantially revised version of the original BDI. Essentially, the measure was revised to assess more fully the symptoms that correspond with the DSM-IV (1994) criteria for depressive disorder diagnosis (Beck et al., 1996).

The BDI-II consists of 21-items reflecting depressive symptoms and attitudes. Each of the items contain four statements to which respondents are required to pick out one statement that best describes them over the past two weeks. Responses are coded 0 to 3 with '0' representative of total absence of the specific symptom and '3' the most severe level. Total scores on the BDI-II range from 0 to 63. The manual (Beck et al., 1996) provides guidelines for cutoff scores for depression severity: 0-13 minimal, 14-19 mild, 20-28 moderate, and 29-63 severe.

Reliability and validity data is adequate. Beck and colleagues (1996) established the psychometric properties using two samples: 500 outpatients (aged 13 to 86 years; mean 37.20, SD = 15.91) from multiple ethnic backgrounds, and 120 university students (mean age = 19.58, SD = 1.84) who were predominantly white. Internal consistency (alpha reliabilities) ranged from .92 to .93 for the two groups respectively, providing higher internal consistency than the previous version (BDI-IA; $r = .86$)(Beck, Steer, & Garbin, 1988, cited in Beck et al., 1996). Stability of the BDI-II scores over time is satisfactory. The test-retest correlation coefficient over a one-week period was found to be .93 ($p < .001$)(Beck et al., 1996).

The manual (Beck et al., 1996) also provides evidence of concurrent validity. For example, the BDI-II is highly correlated with the BDI-IA ($r = .84$ to $.93$), the Beck Hopelessness Scale ($r = .68$), and the Scale for Suicide Ideation ($r = .37$).

Teacher Report

CBCL – Teacher Report Form (TRF)

The CBCL – Teacher Report Form (TRF) is based on the CBCL and parallels the parent version of the CBCL. The most recent TRF (Achenbach, 1991c) is a revised-version of the 1986 TRF (Achenbach & Edelbrock). Revisions included the rewording of some items and the extension the norms to include children aged 17 and 18 years (Achenbach, 1991c). The TRF is designed to be completed by the child's primary teacher, with the purpose of providing a standardised report of the pupil's problems, and adaptive functioning within the classroom. The measure aims to tap competencies and problem behaviours of concern to parents and mental health workers (Achenbach, 1991c).

As with the CBCL, adaptive functioning and behaviour problems make up the two major sections of the report form. Adaptive functioning is evaluated via five items, one targeting mean academic performance and the remaining four, adaptive behaviour (i.e., how hard the child is working, how appropriately the child is behaving, how much is being learnt, and how happy the child is). Items are used to calculate five sub-scores: academic performance, working hard, behaving appropriately, learning, and happy. The last four sub-scores are also used to provide a total adaptive functioning score. Further academic information is obtained via two questions regarding achievement test scores, and IQ, readiness, or aptitude test scores.

The 118 behaviour problem items provide the same scales scores as the CBCL (see Parent Report measures above). Teachers are asked to rate the specified child on each of the problem behaviours within the past two months using a three point forced choice scale. Items are scored zero (not true), to two (very true or often true). The shorter, two month period for teacher ratings (compared with six month parent ratings) allows for repeated ratings by the teacher across the same school year and prevents the restriction of ratings by teachers to only the last part of the school year (Achenbach, 1991c).

The TRF is scored using gender-specific profiles that provide age specific rating indices (6-11 years and 12-18 years). The profile provides raw scores for each scale, plus percentiles and normalised *T*-scores based on gender in each age range (Achenbach, 1991c). For the purposes of the current research, Internalising and Externalising scores, and the Anxiety/Depression and Somatic scales were used. Additionally, the Academic Functioning score and related questions were used to screen for baseline intellectual functioning.

The TRF competency and problem scales have adequate interrater stability. Achenbach and colleagues (1990, as cited in Achenbach, 1991c) studied test retest reliability using different teacher ratings of 44 children (aged 8 to 9 years) across a mean interval of 15 days. They found all correlations to be significant ($p < .01$) except for Thought Problems for girls whose scores on the subscale were mostly zero.

Moderate interrater agreement and score stability has been established using a sample of 19 boys (aged 7 to 11 years) referred for special services due to behavioural/emotional

problems (Achenbach, 1991c). Interrater correlations for teachers seeing students under different conditions (e.g., special education classes, sports) were .55 for adaptive functioning, and .45 for problems scores; similar correlations between teachers and teacher aids who see students under similar conditions were also observed (mean $r = .60$, and .55; adaptive functioning and problems scores, respectively). The mean stability of problem scores across a two and four-month period for the same sample was .75 and .66, respectively. The stability of these results are seen to be adequate given natural variability, the potential effects of intervention and a regression towards the mean expected for 'deviant' subjects (Achenbach, 1991c).

Validity data is also adequate (Achenbach, 1991c). The author of the TRF manual compared 1275 students referred for services for behavioural/emotional problems and 1275 matched (age, gender, ethnicity, and SES) pupils selected from the 1989 normative national sample scores on every item of the TRF. Results found significant differences between referred and non-referred students with referred children scoring higher on most of the problem items and lower on all the adaptive functioning items.

Confidence in the construct validity of the measure has been gained via the extensive use of the measure as an assessment tool. Over a hundred studies are reported to have used the pre-1991 TRF in this manner (Achenbach & Brown, 1991 as cited in Achenbach, 1991c). Given the high level of correlation between the versions, the findings are taken as likely to be applicable to the current version (Achenbach, 1991c).

Convergent validity has also been supported. The TRF scales are moderately to highly correlated with the Conners Revised Teacher Rating Scale (Goyette, Conners, & Ulrich, 1978 cited in Achenbach, 1991c). For example, Pearson correlation coefficients for the TRF scales with the Conners Conduct Problems, Inattention-Passivity, and total problem scores ranged between .80 to .83. A comparison of the Conners Hyperactivity scale with the closest TRF counterparts were Aggressive Behaviour ($r = .67$) and Externalising ($r = .63$).

Further, criterion-related validity is supported via the ability of the TRF's scale scores to discriminate between 2550 matched non-referred "normal" and referred children (Achenbach, 1991c). Using multiple regression methods, the authors have established

that, regardless of age or gender, referral status consistently accounts for the greatest percentage of the variance in TRF ratings. Additional criterion related validity is provided via discriminant analysis, testing the classification accuracy of diagnosis for known referred or non-referred samples (Achenbach, 1991c). Adequate levels of classification accuracy have been established. Overall, approximately 28% of the sample were misclassified, with false negatives and false positives occurring at about the same rate. Where pre-treatment TRF scores have been elevated, studies have found the TRF to be sensitive to treatment effects (e.g., Howard & Kendall, 1996).

Normative data for the TRF are drawn from a large subset of subjects in the development of the CBCL national normative sample of children ($n = 1613$) aged 4 to 18 years including multiple ethnic, socio-economic, and urban/rural groups. Normalised *T*-scores and cutoff points indicative of normal, borderline, and clinical are provided for each of the scales. *T*-Scores of less than 65 are within the normal range and scores of 67 or higher in the clinical range. The TRF manual provides both extensive normative data and detail regarding normative data developed for all scales.

Therapy Measures

Child's Perception of Therapeutic Relationship (CPTR)

The Child's Perception of Therapeutic Relationship (CPTR)(Kendall, 1994) is a 7-item, 5-point Likert scale designed to assess the child's perception of the child-therapist relationship. Four of the questions ask about how much the child liked the therapist, how much time the child would like to spend with the therapist, the child's comfort level with the therapist and how able the child feels he/she can talk to the therapist. The remaining items assess the quality and level of closeness of the therapeutic relationship. The scale ranges from 1 to 5 ('not at all' to 'very') with increased scores indicating an increased positive therapeutic relationship. To minimise demand and as with all other measures, the diagnostician rather than the therapist administered the measure at the end of treatment.

The CPTR has been included in previous childhood treatment studies to examine the relationship between the child-therapist relationship and treatment outcome (e.g., Kendall, 1994; Kendall et al., 1997). Results of such studies indicate that it is sensitive

to treatment outcome. For example, Kendall et al.'s (1997) study of anxious children ($n = 94$) indicated the measure, while not a significant predictor of change was correlated with treatment gains and maintenance (pre- to post-treatment, and post-treatment to 1-year follow-up). The measure was included in the current study to assess the consistency of the therapeutic relationship across the two treatment conditions.

Recall of Content Questionnaire (RCQ)

The Recall of Content Questionnaire (RCQ) is a 6-item free-recall questionnaire designed to be administered to both parent(s) and child. The measure is designed to assess recall of treatment content, and satisfaction with the treatment programme. The first five questions are the same for parents and children and ask about what they remember about the programme, what was important and unimportant, and what they liked and disliked about the programme. The last item on the parent form refers to how parents felt about the level of parental involvement, while the last item on the child form refers to how much they remember about specific things done during treatment (e.g., relaxation exercises, *in-vivo* exposure). The questionnaire was included not only to assess treatment recall and satisfaction; it was included to examine any potential recall or satisfaction differences between the BT and CBT conditions.

History and General Demographic Information

Phone Form

At the point of first contact, a standardised phone form, designed for the current research purposes was used to obtain screening information. Questions targeted contact details, the caller's primary concern regarding their child, whether previous treatment for anxiety for the child had been sought or undertaken, and if any anti-anxiety or anti-depressant drugs had previously and/or were currently being taken.

General Demographic Information Form

An additional General Demographic Information form was administered to parents during the first meeting. The form was used to collect information regarding ethnic affiliation of the child, age and gender of the child, and number of siblings.

Additionally, the form required parents to answer questions about their own ethnic affiliation, their relationship to the child (e.g., natural mother/father, step-mother/father,

foster mother/father), living arrangements within the home (e.g., single, two parent, foster or guardian home), their age, marital status, education level, and income.

Design

A repeated single-case research design was used, using a multiple-baseline across participants design. Components within the current research design included a multiple-reporter baseline across participants and a multiple-measures baseline across participants to demonstrate the controlling effects of treatment on anxiety and to control for potential effects of repeated measures. Further, the use of multiple-baseline means that it is not necessary to withdraw or alter treatment to reverse behaviour. The design demonstrates the effect of treatment by showing change in behaviour across multiple individuals (and measures) with the introduction of treatment across different points in time (Kazdin, 1998).

This current design has several strengths. First, the use of a ‘standard’ treatment (i.e., the CBT programme) comparison rather than a no-treatment comparison is that the client’s demands for service as well as ethical considerations are met. That is, all participants received a treatment that was designed to work. Second, because all participants are receiving active treatment, attrition is less likely to be an issue than if comparative groups, such as a no-treatment or extended wait-list, were used. Third, the ‘standard’ treatment can control for many factors that may otherwise confound research findings (e.g., therapist contact, participation in sessions, receipt of treatment).

Limitations of comparing BT with CBT may be increased researcher enthusiasm and increased input for the ‘new,’ BT intervention. The use of a treatment integrity check and the CPTR was designed to reduce the chance of this occurring. Further, in terms of group comparisons, the small number of participants in the current study may be seen as a limitation. However, the primary aim of this study was to look at the impact of treatment across individuals. The use of a single-case design meets the basic criterion of having clinical (external) validity in that it is able to maximally tailor the intervention to individual clinical cases (Goldfried & Wolfe, 1998). In treating participants within the individual framework of a single-case design, the current research allowed for

'clinical' flexibility of treatment focus (e.g., separation anxiety, social anxiety, specific fears).

Procedure

Recruitment

Initial contact with participants was obtained via individuals phoning the researcher in response to advertisements placed in local school newsletters, the Palmerston North *Tribune* newspaper or the *Guardian* newspaper. Nine primary, and two intermediate schools within Palmerston North were targeted. To ensure children from lower socio-economic regions had an equal opportunity of being included within the research, schools in lower socio-economic regions were targeted more heavily than those in higher SES areas. The advertisement asked for volunteers to participate in research designed to aid anxious children.

At the point of first contact, the caller was provided with preliminary information regarding the research and brief details were obtained regarding the child. Potential participants and their parents were then mailed information sheets that provided an outline of the aims and nature of the research in conjunction with procedures used in treatment (see Appendix D and E). After potential participants responded to the information sheets, an interview time was set up with an assessor (a graduate clinical psychology student trained in administration). At the time of the first meeting, informed consent from the parent(s) and child was obtained in writing. To increase children's understanding and readability, separate parent and child consent forms were used (see Appendix F and G).

Following consent by parents and children to participate in the study, an interview procedure to ensure that participants met criteria for a primary diagnosis of a childhood anxiety disorder was undertaken. The process required that parents and children underwent individual diagnostic interviews (the ADIS for DSM-IV:C). The interview process served a number of purposes. It ensured criteria for the study were met, provided initial baseline data, and provided specific information regarding the child's presenting problem to guide treatment. If the child met inclusionary criteria, child and parent(s) completed the paper and pencil measures. The TRF was also posted out to and

completed by the child's primary teacher. The TRF was returned to the clinic via a pre-paid self-addressed envelope. If children did not meet criteria, their parents were provided with feedback and referred appropriately.

Assessment

The research acknowledged that timing of assessments is a potential problem in child and adolescent research. Anxiety disorders, while generally stable over time, often improve at the end of the school year when children no longer need to meet the daily challenges of homework, peer interaction, and being apart from their parents (Albano, Heimberg & Barlow, 1995 cited in Chorpita, Barlow, Albano, & Daleiden, 1998). Assessment findings may thus be invalidated by events that overlap with assessment times (Chorpita, Barlow et al., 1998). Repeated follow-up assessments (3-, 6-, and 12-month) were included to control for such events.

All participants were administered the structured diagnostic interviews, child self-report, parent, and teacher report measures at pre-treatment, post-treatment, and at 3-, 6- and 12-month follow-up. Additionally, a mid-treatment assessment was administered to the six children in the CBT treatment condition following their eighth treatment session. Therapy measures were administered to both treatment conditions at post-treatment assessment and follow-up assessments. All assessments were conducted by the trained assessor, blind to condition. In addition, across the waitlist periods and prior to every treatment session, anxiety features and child coping were assessed via child self-reports using the STAIC-T and CQ-C, and via parent report using the STAIC-T-P and CQ-P.

Random Allocation

Participants were randomly allocated to either the BT or the CBT condition using a random table of numbers (Strait, 1989; Appendix C). Random table numbers 0 to 4 and 5 to 9 were allocated to the BT condition and the CBT condition respectively. Treatment conditions were paired. For example, if participant number one received a number between 0 to 4 on the random table, the participant was allocated to the BT condition and the 'pair' (participant number two) automatically allocated to the CBT condition. Using this procedure, it was equally probable that a participant would be allocated to one of the two treatment conditions. It was also intended that baseline

waitlist (WL) conditions would be randomly allocated using the same yoked procedure. However, due to clinical necessity, adherence to predetermined WL periods was not possible in every case. Random allocation to treatment condition and actual WL periods are presented in Table 7.2.

A time-limited baseline, rather than a longer waitlist period, was deemed sufficient for two reasons. First, a large body of research has indicated that anxiety is relatively stable over time (Fergusson & Horwood, 1993; Gullone & King, 1997; Rapee & Barrett, 1993; Strauss, Lease, Last, & Francis, 1988). For example, a longitudinal study (Fergusson & Horwood, 1993) of New Zealand children ($n = 783$), found latent anxious traits were stable across multiple time-periods (at ages 8-, 10-, and 12-years). Correlations between these traits across time ranged from .82 to .91. Second, the literature indicates that previously empirically supported and validated treatment may serve as a control comparison condition (Chambless & Hollon, 1998). The CBT programme (Kendall, 1994) meets this criteria (Chambless & Hollon, 1998; Kazdin & Weisz, 1998). The current study uses both waitlist comparisons, across individual cases, and a treatment condition comparison, comparing BT with CBT across subjects.

Table 7.2. Participant allocation to CBT or BT and waitlist conditions.

Participant	Treatment Condition	Waitlist Condition	Participant	Treatment Condition	Waitlist Condition
1	BT	3 weeks	2	CBT	3 weeks
3	CBT	5 weeks	4	BT	3 weeks
5	BT	8 weeks	6	CBT	4 weeks
7	CBT	6 weeks	8	BT	6 weeks
9	CBT	8 weeks	10	BT	7 weeks
11	BT	6 weeks	12	CBT	6 weeks

Setting and Therapist

Intake, mid-treatment, and post-treatment assessments were all conducted at a university clinic. All participants were aware that assessment and treatment was part of a research study. Where possible, telephone interviews were used to conduct some follow-up assessments as several of the participants moved away from the area. Treatment for 11 of the children was conducted at the Massey University Psychology clinic, with some exposure-based sessions conducted in the children's natural environments. Due to an issue of transport, one child was treated at the school he attended. The school provided a private office for treatment purposes. The author, who was training as a clinical psychologist, provided therapy to all participants.

Treatment

On completion of the baseline phases, participants began treatment. Six participants were assigned to the CBT treatment condition and six to the BT treatment condition. CBT therapy followed Kendall et al's (1990) treatment manual. The manual outlines specific session objectives and describes goals and strategies to be implemented in each session. The BT therapy also followed a manualised approach (Huzziff & Ronan, 2002) based on the behavioural components and strategies used in Kendall et al's CBT treatment programme (Kendall, Chansky et al., 1992). As with the CBT manual, the BT manual outlines specific session objectives and describes goals and strategies to be implemented in each session. The three main goals of treatment are the same for both treatment conditions: (a) anxiety management, (b) a reduction in personal distress, and (c) an increase in coping and mastery skills.

Approximately 60 minutes per session was spent with children regardless of treatment condition. Both conditions contained the same level of parental involvement. Prior to or following each session, parents were seen for approximately five minutes to discuss any concerns and to briefly discuss homework. The CBT programme included a parent session between the third and fourth session. The BT programme included a parent session between the third and fourth session. The parent session in each treatment programme was used to gain any further information required regarding specific anxiety situations, informed parents of skills being taught and how they may help aid their child's coping, and to answer any questions parents had.

Application of each programme was done in an individualised, flexible and clinically sensitive manner as recommended (Kendall et al., 1990; Kendall, Kortlander et al., 1992). For example, consideration was given to the participant's age, cognitive and social level, anxiety characteristics, and family factors (support and ability to aid the child with mastery of new skills and situations).

CBT Condition

The CBT treatment programme is 16 to 20 sessions in length. The first eight sessions focus on training sessions in which cognitive, behavioural and affectively based techniques are taught to the child. Techniques include recognition of anxious arousal cues, relaxation, imagery, correcting distorted self-talk, problem solving and reinforcement for increased success. Methods used to teach the child each of these techniques include therapist modelling, role-plays, and homework. Concepts and skills are introduced sequentially, progressing in difficulty.

The second half of treatment focuses on applying newly learned skills. The skills are practised via the use of both imaginal and *in vivo* exposure that are increasingly anxiety provoking for the child and are based on the hierarchy developed in the first half of treatment. Planning and flexibility are vital features of this phase requiring the therapist to ensure that effective coping is experienced in salient anxiety inducing situations. This requires more initial time in imaginal exposure prior to *in vivo* exposure for some children, while others are able to start *in vivo* practice more quickly. Details of the treatment programme are available in the treatment manual (Kendall et al., 1990) and in the development team's book (Kendall, Chansky et al., 1992); see also Chapter 5.

BT Condition

The BT treatment programme is 8 to 10 sessions in length. Treatment focuses on training sessions in which behaviourally based techniques are taught to the child. Techniques include recognition of anxious arousal cues, relaxation, behaviourally-and performance-based 'actions that can help,' and reinforcement for increased success. Methods used to teach the child each of these techniques include therapist modelling,

role-plays, and homework. The concepts and skills taught during treatment are introduced sequentially, progressing in difficulty.

The application of newly acquired skills is begun by session three. The skills are practised via the use of both imaginal and *in vivo* exposure that are increasingly anxiety provoking for the child and are based on the hierarchy developed from the assessment and in the first two treatment sessions. Planning and flexibility are vital features of this phase. As when administering the CBT programme, the therapist needs to ensure that effective coping is experienced in salient, anxiety inducing situations. This may require more initial time in imaginal exposure prior to *in vivo* exposure for some children, while others will be able to start *in vivo* practice more quickly. Details of the treatment programme are available in the treatment manual (Huzziff & Ronan, 2002; see also Appendix H for an outline of BT session objectives and goals).

Treatment Materials

Several programme resources and stimulus materials were used in both treatment programmes to facilitate and reinforce treatment goals and skills such as recognition of anxious cues, and the provision of rewards. Workbooks were used for children to complete a variety of homework tasks related to therapy sessions. Homework tasks completed outside of therapy were referred to as ‘Show That I Can’ tasks (STIC tasks). STIC tasks were designed to reinforce and generalise the coping strategies taught within sessions. A ‘Rewards Bank’ was used to record points for completed STIC tasks. Children traded points in for tangible (stationary, stickers, or small toys) or social rewards (fun activities with the therapist). The CBT children traded STIC points in for tangible rewards following the fourth and eighth session and social rewards following the twelfth and sixteenth session. BT children traded STIC points in for tangible rewards following the fourth session and social rewards following the eighth session.

Assessment and Treatment Integrity

To maintain research integrity, and prevent outcome bias, the study used a single-blind protocol, whereby the assessor was not informed about the treatment protocol. A registered, senior clinical psychologist, skilled in the assessment procedures and both the development and the implementation of the treatment packages (e.g., Kendall,

Chansky et al., 1992; Ronan & Deane, 1998) administered ongoing supervision of assessment and treatment. Additionally, assessment and treatment sessions were audio taped. To ensure treatment protocol was adhered to, random screening of audio taped assessment and treatment sessions were undertaken by two senior clinical psychologists, one of who was independent of the research and blind to the research hypotheses. Auditing of the treatment protocols by an independent assessor was done to reduce the potential of allegiance effects.

Several measures were taken to ensure equivalence between treatment programmes regarding the number and length of sessions. First, planned session length and level of parent involvement were equivalent. Second, following the first half (eight sessions) of the CBT treatment programme, children and their parents were involved in a mid-treatment assessment. Conducting assessment at this stage served two purposes: (1) as a control for the number of treatment sessions in each treatment programme, and (2) to assess the benefits of the first half of the CBT programme.

Additionally, the use of manuals was designed to ensure adherence with intervention procedures. Manuals increase both internal validity and treatment integrity by providing a standardised method for treatment implementation while allowing for individualised case formulations. In addition, manualised treatment allows for comparison of treatments across contexts (e.g., specific anxiety disorders) and eliminates potential confounds (Kendall & Flannery-Schroeder, 1998). The use of the manuals also allows for comparisons between the current research and previous research results.

Ethical Considerations

The research was conducted in accordance with the ethical guidelines of the New Zealand Psychological Society (1985). The Massey University Human Ethics Committee reviewed and approved the current research. Ethical issues salient to the current research are outlined.

Confidentiality of client information (child, parent, and teacher) was maintained for all participants. All initial data, treatment information, and follow-up data were kept in a

locked, secure environment. On completion of treatment and follow-up, code numbers for data processing and storage purposes identified data (including all tapes). Participants are not identifiable in either the raw data or in the final research report.

All potential participants were informed in written and verbal form of the nature and purpose of the study. Participants were encouraged to ask questions at any time during the waitlist, treatment, and follow-up periods about any aspect of the study. Additional information regarding the research was made available through contact with the researcher or the research supervisor. The voluntary nature of the research was made clear verbally and in written form, ensuring that participants knew that they had the right to decline to take part in the study at anytime without treatment being denied. Consent for participation in the research was gained from children and their parents. Care was taken to ensure consent forms and information sheets were worded in language appropriate to the client sample.

The research was considered to pose a low risk of harm to participants. The children's welfare was considered of the utmost importance. Treatment progress was monitored closely, and screenings and close supervision by a senior clinical psychologist was provided with the researcher prepared to modify, or discontinue treatment, if any participant was at risk. Finally, no conflict of interest occurred between the treatment centre and participants as treatment was offered free of charge regardless of continuing participation in the study.

CHAPTER 8

RESULTS

A major goal of the current study was that children, regardless of treatment condition (cognitive-behavioural or behavioural), would no longer qualify for an anxiety disorder following intervention. Prior to treatment, all 12 participants received a primary anxiety diagnosis. Six children aged 7 to 12 years (3 females and 3 boys) participated in CBT; six children, aged 6 to 11 years (1 female and 5 boys), BT. Chapter 8 first provides information on treatment fidelity and diagnostic reliability. Next individual case study results are presented; CBT results, then BT results. Finally, results across treatment condition are assessed and compared.

Treatment Fidelity and Booster Sessions

Two experienced cognitive-behavioural therapists (and senior clinical psychologists) each reviewed 12% of randomly selected audiotapes of treatment sessions. Adherence to treatment content and session goals was rated 100% for both BT and CBT delivery, and no alternative treatment strategies were used.

Two CBT children (Eve and Matt) and their mothers completed two 'booster' sessions between post-treatment and 3-month follow-up. The booster sessions, requested by the mothers, focused on reviewing treatment strategies and the generalisation of new skills. Of the children receiving BT, one child (Cory) completed one booster between post-treatment and 3-month follow-up.

Diagnostic Reliabilities

All diagnostic interviews were conducted by a trained assessor blind to treatment condition. A second rater reviewed eight (22%) randomly selected tapes to assess disorder reliability. Analysis of diagnostic reliabilities demonstrated that there was 100% agreement on anxiety diagnoses.

Individual Case Study Results: Cognitive Behavioural Treatment

Child Diagnoses

Table 8.1 shows that five of the six CBT participants met diagnostic criteria for more than one anxiety disorder at pre-treatment. At mid-treatment, two participants (Hope and Joy) no longer met diagnostic criteria for their primary disorder. At post-treatment, three of the participants (Joy, Sid and Ron) no longer met criteria for any anxiety disorder and one (Matt) no-longer met diagnosis for his primary, pre-treatment anxiety disorder. Of the others, while Eve and Matt's diagnostic anxiety severity ratings decreased from the severe to moderate range on the ADISC-C/P pre- to post-treatment, they continued to meet diagnostic criteria. At post-treatment, assessment was not conducted for Hope as she completed the first half of treatment only (her mother withdrew her from the programme given a perceived reduction in problems). Treatment gains continued or were maintained for all participants, including Hope across 3-, 6- and 12-month follow-up. The two children (Eve and Matt) who continued to meet criteria for an anxiety disorder following treatment no longer did so at 12-month follow-up. A 12-month follow-up was unable to be carried out with Ron and his mother as they relocated and were unable to be contacted.

Child Reports

FSSC-R

Table 8.2 shows that pre-treatment FSSC-R intensity scores for two participants (Matt and Sid) were elevated compared with gender related norms (Matt > 2 SD and Sid > 1 SD: Ollendick et al., 1989). At mid-treatment, Sid reported scores within the normal range; at post-treatment, both of these participants reported scores within the normal range. Overall, score reductions occurred for five of the six children pre- to mid-treatment. Mid- to post-treatment reductions occurred for all five children who completed the second half of treatment and score reductions continued across 3-, 6- and 12-month follow-up assessments for these five children. In contrast, the participant who completed the first half of treatment only (Hope), while continuing to report scores within the normal range, reported an increase in intensity score between post-treatment and follow-up.

Table 8.1. CBT Participants' Diagnoses Over Time

Participant	Age	Sex	Assessment Points					
			Pre-treatment	Mid-treatment	Post-treatment	3-Month follow-up	6-Month follow-up	12-Month follow-up
(02) Eve	12	F	SAD GAD	SAD	SAD GAD	GAD Sp P	ND	ND
(03) Matt	7	M	GAD SAD Sp P AP	Sp P GAD	Sp P	Sp P GAD	Sp P	ND
(06) Hope	12	F	SAD PTSD	ND	-	-	ND	ND
(07) Joy	11	F	GAD	ND	ND	ND	ND	ND
(09) Sid	7	M	SAD GAD Sp P	SP Sp P SAD	ND	ND	ND	ND
(12) Ron	12	M	SAD GAD Sp P	SAD	ND	ND	ND	-

Note: M = male; F = female; ND = No Diagnosis; SAD = Separation Anxiety Disorder; SP = Social Phobia; GAD = Generalised Anxiety Disorder; Sp P = Specific Phobia; AP = Agoraphobia without History of Panic Disorder; PTSD = Post-Traumatic Stress Disorder; - = data incomplete or not obtained. The primary anxiety diagnosis for each participant is noted in bold.

RCMAS

Table 8.2 shows a pre- to post-treatment reduction in the RCMAS *T*-score to within normal limits for the one participant (Matt) with elevated pre- and mid-treatment scores. Of the others, three reported reduced pre- to mid-treatment scores and four reduced mid- to post-treatment scores. In contrast, while continuing to report *T*-scores within normal limits, Ron reported an increased score at mid-treatment, Joy an increased score at mid- and post-treatment; both reported decreases at subsequent assessments. Post-treatment reductions in *T*-scores continued or were maintained across 3-, 6- and 12-month follow-up assessments for the five participants who completed treatment. The one participant who did not complete the full CBT programme (Hope) reported an increased score at 6- and 12-month follow-up.

Table 8.2. Child Self-Report Scores on Outcome Measures for CBT Condition.

Measure	Participant	Assessment Points					
		Pre-treatment	Mid-treatment	Post-treatment	3-Month follow-up	6-Month follow-up	12-Month follow-up
FSSC-R (Total)	(02) Eve	136	102	92	91	90	85
	(03) Matt	177*	192*	141	157	120	118
	(06) Hope	99	92	-	-	109	104
	(07) Joy	98	87	85	87	83	82
	(09) Sid	160*	140	117	91	83	85
	(12) Ron	124	96	84	80	80	-
RCMAS (T-score)	(02) Eve	53	49	43	35	28	25
	(03) Matt	67*	65*	33	50	33	24
	(06) Hope	44	39	-	-	47	40
	(07) Joy	43	44	55	34	26	32
	(09) Sid	52	49	41	26	33	33
	(12) Ron	50	54	35	26	26	-
STAIC-S (T-score)	(02) Eve	53	51	51	53	43	45
	(03) Matt	35	35	30	33	30	30
	(06) Hope	51	51	-	-	51	53
	(07) Joy	50	30	23	27	23	30
	(09) Sid	47	51	47	56	47	40
	(12) Ron	27	36	27	32	27	-
STAIC-T (T-score)	(02) Eve	53	46	30	25	27	25
	(03) Matt	67*	35	32	35	29	34
	(06) Hope	36	27	-	-	48	47
	(07) Joy	38	34	30	27	21	21
	(09) Sid	61*	51	39	22	47	25
	(12) Ron	51	44	21	21	21	-
CDI (Total)	(02) Eve	6	3	8	4	2	1
	(03) Matt	9	9	2	4	5	2
	(06) Hope	4	4	-	-	2	11*
	(07) Joy	9	7	2	1	1	3
	(09) Sid	11	12	18*	8	5	2
	(12) Ron	9	7	0	0	0	-
NASSQ (Mean)	(01) Eve	1.54	1.72	1.46	1.13	1.10	1.28
	(03) Matt	2.50	1.43	1.00	1.00	1.00	1.00
	(06) Hope	1.13	1.14	-	-	1.77	1.54
	(07) Joy	1.28	1.39	1.26	1.39	1.10	1.13
	(09) Sid	1.86	1.71	1.86	1.07	1.00	1.00
	(12) Ron	1.62	1.39	1.10	1.08	1.00	-
CQ-C (Mean)	(02) Eve	3.0	4.0	4.3	6.0	6.3	6.3
	(03) Matt	2.0	5.3	6.0	5.3	7.0	6.7
	(06) Hope	4.0	6.0	-	-	6.0	4.0
	(07) Joy	3.7	4.7	5.7	7.0	7.0	6.7
	(09) Sid	1.3	3.7	4.7	7.0	7.0	7.0
	(12) Ron	3.3	3.7	5.3	6.7	7.0	-

* = Clinically elevated scores (compared with age and or gender norms)

Note: FSSC-R = Fear Survey for Children – Revised; STAIC-S = State Trait Anxiety Inventory for Children – State; STAIC-T = State Trait Anxiety Inventory for Children – Trait; CDI = Child Depression Inventory; NASSQ = Negative Affect Self-Statement Questionnaire; CQ-C = Coping Questionnaire for Children; - = data incomplete or not obtained

STAIC-S

Table 8.2 shows that *T*-scores were within the normal range for all participants across all assessment points, including pre-treatment. With the exception of one participant, state anxiety scores remained relatively stable across all assessments. In terms of the exception, compared with pre-treatment scores, Joy reported markedly lower scores at all of the subsequent assessment points.

STAIC-T

Mid- and post-treatment scores on the STAIC-T showed a reduction in chronic anxiety for the two children (Matt and Sid) with elevated pre-treatment *T*-scores (≥ 60). The others also reported a decrease in pre- to mid- and mid- to post-treatment scores. Post-treatment reductions in *T*-scores continued or were maintained across 3-, 6- and 12-month follow-up. Notably, Hope, the participant who did not complete the second half of treatment reported an increased *T*-score at 6- and 12-month follow-up compared with pre- and mid-point scores (see Table 8.2).

CDI

Table 8.2 shows that CBT participants all reported mild levels of depressive symptoms at pre-treatment. Two children reported reduced scores across pre- to mid-treatment, and three of the five children who completed treatment reported reduced scores across mid- to post-treatment. Of the others, Eve, while continuing to report scores within the mild range, reported a post-treatment score higher than her pre-treatment score. Surprisingly, Sid's CDI scores increased at mid- and post-treatment assessments compared with pre-treatment scores. Sid's post-treatment score (18) indicated a moderate level of depression (CDI > 13: Cole, Peeke, Martin, Truglio, & Seroczynski, 1998). Post-treatment reductions were generally maintained or continued across follow-up. Sid reported reductions in depressive symptoms across follow-up, with a very low score (CDI = 2) at 12-month follow-up. In contrast, the participant who did not complete the second half of treatment (Hope) reported an elevated 12-month assessment score. This score was higher than her pre-treatment score and within the clinical range compared with other girls of a similar age.

NASSQ

Table 8.2 shows that three participants reported reduced pre- to mid-treatment mean scores and four mid- to post-treatment. Two participants (Matt and Ron) reported a marked reduction in mean scores across pre- to post-treatment. One participant (Eve), reported an increased pre- to mid-treatment score; however, her post-treatment score was reduced to a level slightly below pre-treatment. Joy's scores, while showing some reductions at various assessment points, remained relatively stable across assessments. Treatment gains were generally maintained or continued across follow-up for the five participants who completed the second half of treatment. In contrast, Hope's 6- and 12-month follow-up scores were elevated when compared with pre- and mid-assessment scores.

CQ-C

Participant mean CQ-C scores on the three questions related to individualised anxiety provoking situations showed positive changes from pre- to mid-treatment for all participants (see Table 8.2). Four participants reported increased mean scores of two or more points. Positive change also occurred across mid- to post-treatment. At post-treatment, all five children who completed the second half of treatment reported mean coping skills of four or higher. Four of the five children reported pre- to post-treatment changes equal to or greater than two points; the remaining participant, three points. Post-treatment scores improved or were maintained across follow-up for all participants who completed treatment ($n = 5$). At the 12-month assessment, these participants reported that they were completely able, or almost completely able, to cope with anxiety producing situations (i.e., CQ-C mean scores of 6-7). In contrast, Hope's CQ-C score decreased across follow-up.

Participant CQ-C scores on the fourth question, assessing how much children perceived treatment would help them feel less upset (at post treatment, how much treatment *has* helped them feel less upset), were generally high. All children reported initial scores of four or higher (reported range = 4 to 7). Scores remained stable or increased across treatment. Post-treatment scores were comparable with those reported prior to and across treatment (for a summary of scores see Appendix I, Table I.1).

Parent Reports

STAIC-T-P

Table 8.3 below shows that parents' STAIC-T-P pre- to mid-treatment scores reduced for all six CBT participants. Continued reductions across mid- to post-treatment were reported to have occurred for four of the five participants who completed treatment. From pre- to post-treatment, marked reductions of 19 or more points for three participants (Matt, Joy, and Ron) were reported; the remaining two participants also improved across the second half of treatment. Post-treatment scores, with the exception of some minor fluctuations, were continued or maintained across 3-, 6- and 12-month follow-up for all six participants.

CQ-P

Parent reports of their children's coping (scores averaged across the child's three target complaints) showed positive changes for all participants across pre- to mid-treatment (see Table 8.3). Continuing positive changes occurred mid- to post-treatment for four of the five children who completed treatment. In contrast, Ron's CQ-P score decreased, with a coping score lower than seen at pre-treatment; however, substantial improvements were noted across follow-up. Post-treatment coping skills were generally maintained or improved for five participants across 3-, 6- and 12-month follow-up. In contrast, Matt's CQ-P score, while higher at 12-month follow-up than pre- and mid-treatment scores, demonstrated variability across follow-up.

Parent CQ-P scores on the fourth question, assessing how much they perceived treatment has helped their child cope with anxiety provoking situations, were generally high at post-treatment. All parents reported scores of four or higher (reported range = 4 to 6). Scores remained stable or increased across follow-up (see Appendix I, Table I.2)

CBCL

Parent reports of their child's internalising and externalising problems as measured by the CBCL/4-18 indicated improvement across treatment and follow-up. Table 8.3 shows that at pre-treatment, five of the six participants had anxiety/depression scale *T*-scores in the clinical range ($T \geq 67$), with three also receiving internalising *T*-scores in the clinical range. At mid-treatment, parents reported considerable improvements on both anxiety/depression and internalising scores. Three of the participants with elevated

anxiety/depression scores, and two with elevated internalising scores, reduced to within the normal range at this point. Mid- to post-treatment scores (anxiety/depression and or internalising) continued to reduce, with previously elevated scores returning to within normal limits for all but one participant (Matt). Matt's mother, while reporting lower post-treatment scores than at pre- or mid-treatment, continued to report scores within the clinical range. Overall, participants' post-treatment scores, while showing occasional increases at various follow-up assessment points, were maintained or continued across 3-, 6- and 12-month follow-up. Matt's mother reported an increase in his internalising score at 3-month follow-up; however, a substantial improvement was noted at 12-month follow-up, with the score for the first time no longer within the clinical range. All internalising and anxiety *T*-scores were within the normative range at 12-month follow-up.

Table 8.3 shows that at no point did any participant have clinically elevated externalising *T*-scores (≥ 67). However, participants' externalising *T*-scores did nevertheless generally improve from pre- to mid- and mid- to post-treatment. Exceptions were Eve, who at mid-treatment received a higher score than at pre-treatment, and Ron, who received a higher post-treatment than mid-treatment score. At post-treatment, four of the five participants who completed treatment had reduced scores. Post-treatment externalising *T*-scores, with the exception of occasional fluctuations, were generally maintained or continued to improve across 3-, 6- and 12-month follow-up.

Table 8.3. Parent Scores on Measures on Child Outcome Measures for CBT Condition.

Measure	Participant	Assessment Points					
		Pre-treatment	Mid-treatment	Post-treatment	3-Month follow-up	6-Month follow-up	12-Month follow-up
STAIC-T-P (Total)	(02) Eve	50	44	44	41	32	34
	(03) Matt	60	42	35	39	50	40
	(06) Hope	43	34	-	-	38	27
	(07) Joy	53	41	32	29	30	30
	(09) Sid	51	42	38	33	31	29
	(12) Ron	55	43	36	37	31	-
CQ-P (Mean)	(02) Eve	2.3	4.3	5.0	4.7	5.3	5.3
	(03) Matt	3.0	4.0	5.7	4.7	3.0	5.0
	(06) Hope	3.7	6.3	-	-	6.3	7.0
	(07) Joy	3.0	3.7	4.0	4.7	4.3	5.0
	(09) Sid	2.0	5.7	6.3	6.0	6.3	6.7
	(12) Ron	3.7	4.0	3.3	5.3	6.3	-
CBCL (Int. T)	(02) Eve	65	61	52	50	37	31
	(03) Matt	80*	75*	69*	71*	69*	64
	(06) Hope	62	44	-	-	49	-
	(07) Joy	76*	60	58	52	41	31
	(09) Sid	70*	66	51	49	43	32
	(12) Ron	65	51	48	32	32	-
CBCL (Anx/Dep T)	(02) Eve	68*	66	60	54	50	50
	(03) Matt	80*	72*	68*	64	64	64
	(06) Hope	60	50	-	-	50	-
	(07) Joy	82*	64	62	56	50	50
	(09) Sid	70*	71*	55	52	50	50
	(12) Ron	69*	50	50	50	50	-
CBCL (Ext. T)	(02) Eve	47	51	42	45	33	39
	(03) Matt	66	59	52	65	63	53
	(06) Hope	51	33	-	-	39	-
	(07) Joy	58	56	58	54	51	49
	(09) Sid	55	44	38	35	41	30
	(12) Ron	53	47	49	40	40	-

* = Clinically elevated scores (compared with age and or gender norms)

Note: STAIC-T-P = State Trait Anxiety Inventory for Children –Trait, Parent Version; CQ-P = Coping Questionnaire for Children, Parent report; CBCL (Int. T) = Child Behaviour Checklist (Internalising T-score); CBCL (Ext. T) = Child Behaviour Checklist (Externalising T-score); - = data incomplete or not obtained.

Teacher Reports

Table 8.4 shows that at pre-treatment, the five participants whose teachers responded did not report clinically concerning levels of internalising or externalising behaviour (i.e., T -scores ≥ 67). Teacher reporting of anxious children being within normal limits

for internalising problems is the norm (e.g., Flannery-Schroeder & Kendall, 2000). The table also highlights a poor response rate from teachers despite reasonable efforts to get them completed, resulting in limited pre- to mid- and mid- to post-treatment outcome data. Given the lack of data, comparison across participant assessment points is limited.

Table 8.4. Teacher Scores on Measures on Child Outcome Measures for CBT Participants.

Measure	Participant	Assessment Points					
		Pre-treatment	Mid-treatment	Post-treatment	3-Month follow-up	6-Month follow-up	12-Month follow-up
TRF (Int. T)	(02) Eve	-	57	-	61	-	-
	(03) Matt	56	54	-	-	36	53
	(06) Hope	59	-	-	-	38	38
	(07) Joy	37	43	-	-	-	-
	(09) Sid	57	-	36	-	36	-
	(12) Ron	54	48	-	38	51	-
TRF (Ext. T)	(02) Eve	-	42	-	52	-	-
	(03) Matt	39	39	-	-	46	39
	(06) Hope	42	-	-	-	42	49
	(07) Joy	42	42	-	-	-	-
	(09) Sid	59	-	46	-	57	-
	(12) Ron	48	40	-	40	46	-

Note: TRF (Int. T) = Teacher Report Form (Internalising T-score); TRF (Ext. T) = Teacher Report Form (Externalising T-score); - = not obtained or consent declined.

Parent and Child Reports Across Baseline, Treatment and Post-Treatment

The results of participant trait anxiety are presented in Figures 8.1 and 8.2, and perceived coping in Figures 8.3 to 8.4. Note, data presented at the session eight point also represents mid-treatment data when scores were obtained as part of a full assessment session.

STAIC-T-P and STAIC-T

Figures 8.1 and 8.2 show stable parent and child baseline phases were established for four of the six participants. Overall, baseline scores show a slight decrease in parent and child reports of children's trait anxiety scores for five participants and an increase for one participant (Hope: see Figure 8.1). Matt's mother reported a sharp decline in child trait-anxiety following the initial assessment; however, scores increased across the subsequent baseline points. Further, Joy's mother reported a notable decline in child trait anxiety at the third baseline assessment with scores remaining low across subsequent baseline assessments.

Parent and child scores across treatment sessions show an overall decline in trait-anxiety, with scores showing a somewhat steady decline across session one to mid-treatment and session nine to post-treatment. Compared with post-treatment, 3-, 6- and 12-month follow-up scores for four participants, while showing some increased scores, also show an overall decline in trait anxiety. Of the others, Hope's self-reported scores at follow-up, while not outside of the normal range, were higher than that reported at pre- or mid-treatment; her parent scores remained low. Matt's child and parent reported scores, while well within normal limits and lower than pre-treatment scores, increased across follow-up.

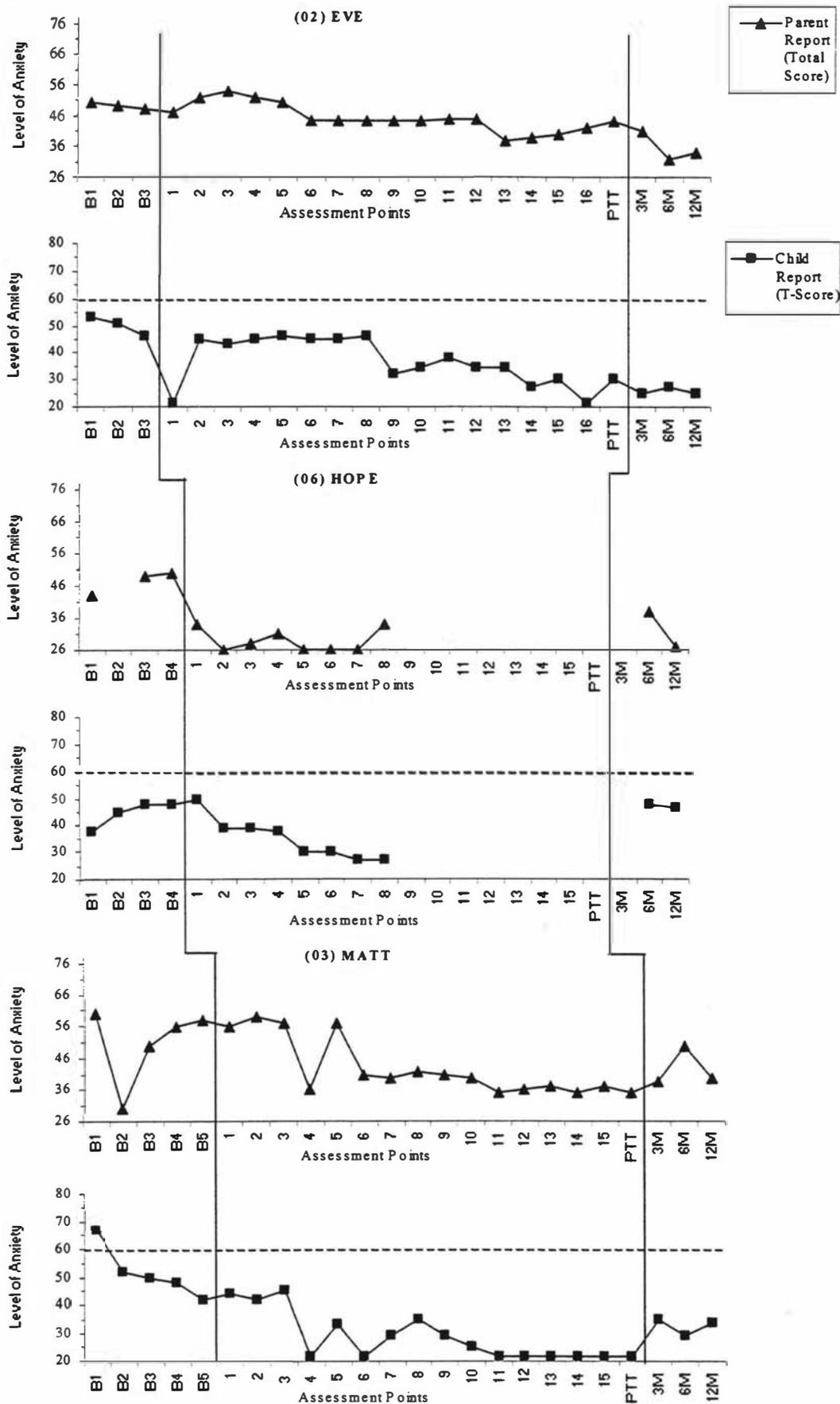


Figure 8.1. Changes in parent and child reported child trait anxiety (STAIC-T-P and STAIC-T) across assessment and treatment sessions for CBT participants Eve, Hope and Matt. B1 to B5 = weekly baseline points, 1 to 16 = weekly treatment sessions, PTT = post-treatment, and 3M, 6M and 12M = 3-, 6- and 12-month follow-up assessment points, respectively.

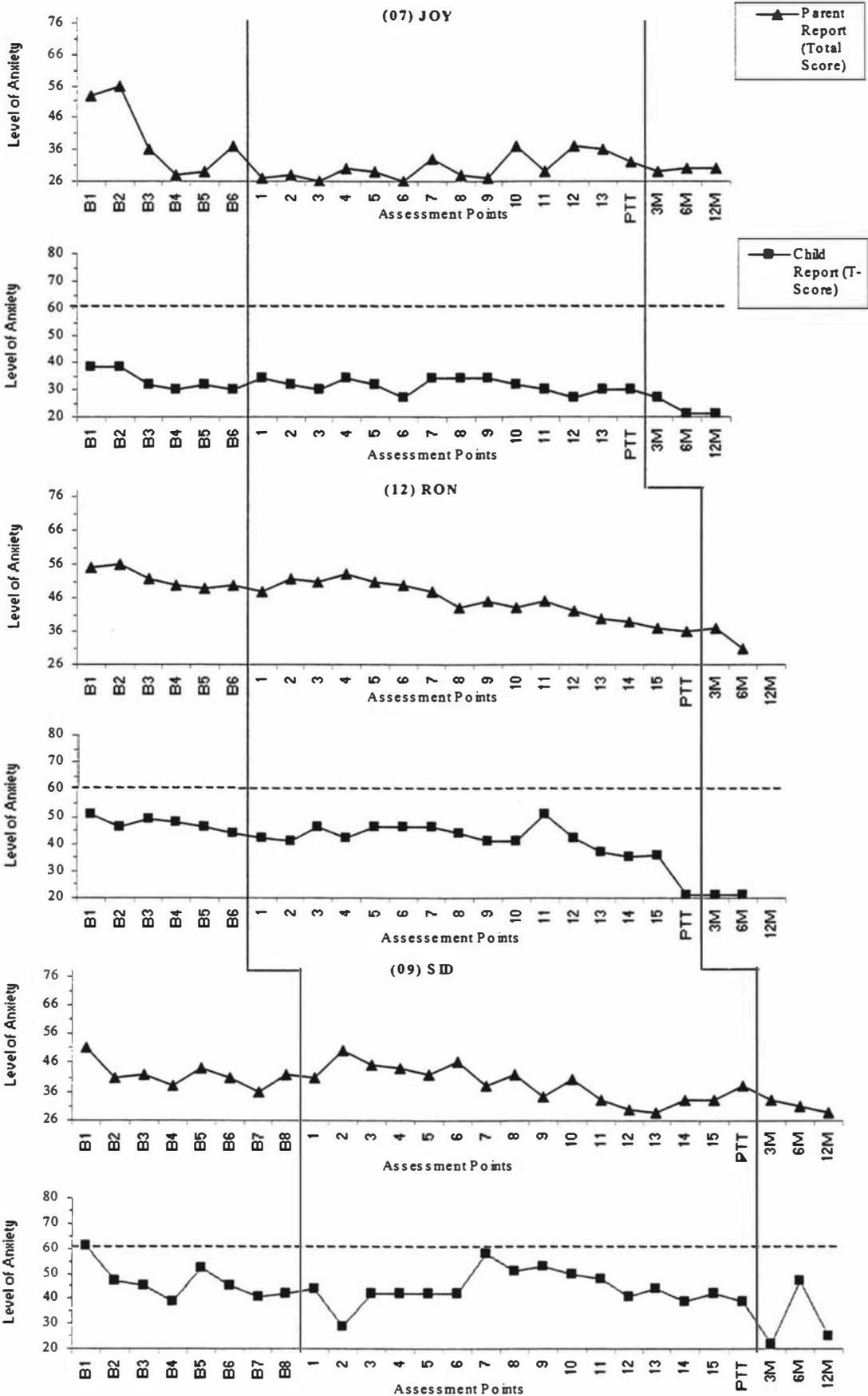


Figure 8.2. Changes in parent and child reported child trait anxiety (STAIC-T-P and STAIC-T) across assessment and treatment sessions for CBT participants Joy, Ron and Sid. B1 to B8 = weekly baseline points, 1 to 15 = weekly treatment sessions, PTT = post-treatment, and 3M, 6M and 12M = 3-, 6- and 12-month follow-up assessment points, respectively.

CQ-P and CQ-C

Figure 8.3 and 8.4 show that parent and child coping scores generally indicated improved coping initially across the baseline phase with scores not becoming stable until the last three to four assessment points. Overall, scores across baseline show increases for all but one participant, Eve, whose scores remained approximately the same. Three participants reported increased mean scores of two or more points on parent and or child measures across baseline (Hope, Matt and Sid). Stable coping scores were established across the final three to four baseline assessment points for four participants, with small fluctuations (≤ 1.0) across mean scores. Of the others, Matt and Hope's baseline coping scores were less stable (see Figure 8.3).

Parent and child scores, while fluctuating from week to week, showed that coping ability scores increased from session one to mid-treatment and from session nine to post-treatment. Compared with post-treatment 3-, 6- and 12-month follow-up scores, on both child- and parent-reports, generally increased for four of the five participants who completed the second half of treatment. Of the other two, Hope, who completed the first half of treatment only, reported a decrease in coping; parent scores indicated an increase. Matt reported increased coping across follow-up; parent scores indicated a decrease.

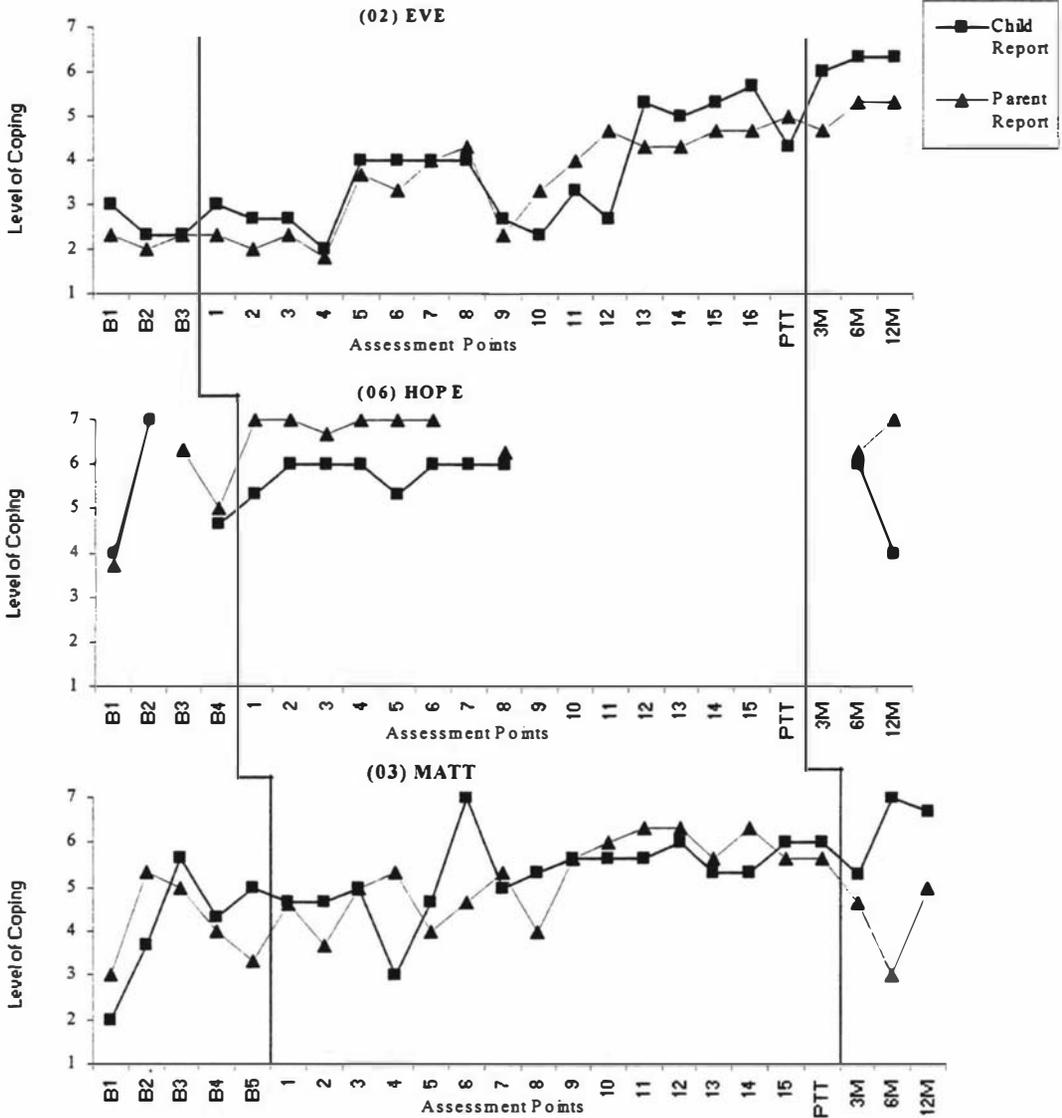


Figure 8.3. Changes in parent and child reported coping skills (mean CQ score for three target complaints across assessment and treatment sessions) for CBT participants Eve, Hope and Matt. B1 to B5 = weekly baseline points, 1 to 16 = weekly treatment sessions, PTT = post-treatment, and 3M, 6M and 12M = 3-, 6- and 12-month follow-up assessment points, respectively.

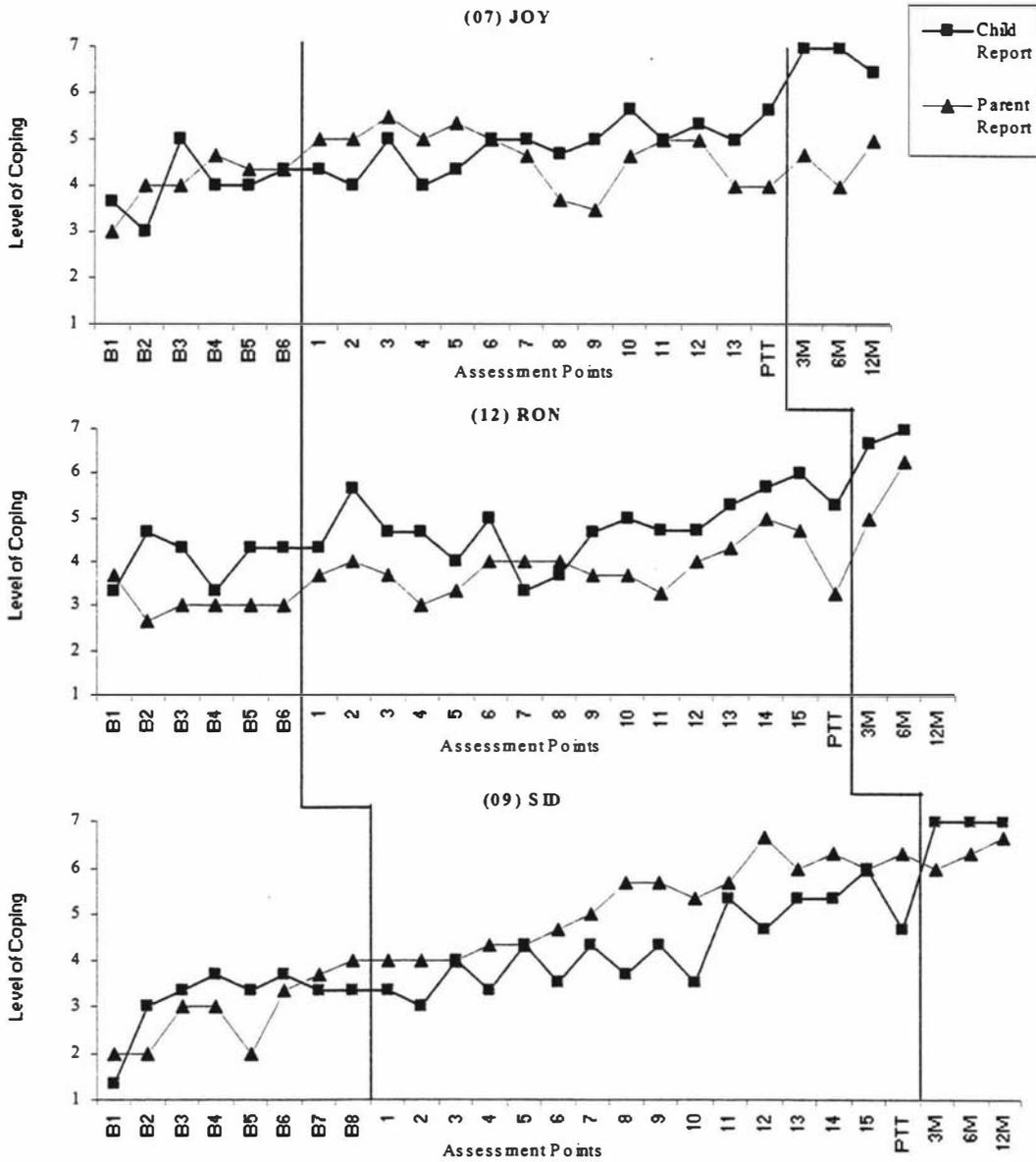


Figure 8.4. Changes in parent and child reported coping skills (mean CQ score for three target complaints across assessment and treatment sessions) for CBT participants Joy, Ron and Sid. B1 to B8 = weekly baseline points, 1 to 15 = weekly treatment sessions, PTT = post-treatment, and 3M, 6M and 12M = 3-, 6- and 12-month follow-up assessment points, respectively.

Parent Self-Report

BDI-II

Table 8.5 shows that scores on the BDI-II were within the normal range for three of the six parents. Of the others, Matt and Hope's mothers' scores were somewhat elevated (score = 10 and 7, respectively), and Sid's mother's score moderately elevated (score = 20). Pre- to mid-treatment scores show a reduction of seven or more points for two of the three parents with elevated scores: Hope's mother's score to zero and Sid's mother's score to within the mildly elevated range (BDI-II ≥ 14 to 19). Notably, scores for Matt and Eve's mothers showed an increase in depressive symptoms at mid-treatment. Mid- to post-treatment scores for the five parents whose children completed treatment were maintained or reduced, with the three parents with previously elevated scores reporting minimal depressive symptoms. Post-treatment reductions for parents without elevated pre-treatment scores were maintained across follow-up, while parents with elevated pre-treatment scores increased across follow-up. Matt and Hope's mothers' reported follow-up scores similar to those at pre-treatment; however, they reported reductions similar to mid-treatment (Hope) and post-treatment (Matt) at 12-month follow-up. Sid's mother, while continuing to report scores lower than at pre-treatment reported mild levels of depression across follow-up.

STAI-T

Table 8.5 shows that two parents' self-reported trait-anxiety scores were outside of the normal range at pre-treatment. Compared with normative data (Spielberger, 1983), Hope's mother reported a *T*-score greater than one SD above the mean: ≥ 60 ; Sid's mother reported a score greater than two SD above the mean: ≥ 70 . At mid-treatment, meaningful changes occurred for these two parents; however, at post-treatment, Sid's mother again reported a trait-anxiety score within the high range (two SD above the mean). Of the others, scores generally decreased across each of these assessment points. Following treatment, all parents' post-treatment scores were maintained or continued to decrease by the final follow-up. However, while Sid's mother reported an overall decrease by 12-month follow-up the score was still greater than one SD above the normative mean.

Table 8.5. CBT Parent Self-Report Scores on Outcome Measures

Measure	Participant	Assessment Points					
		Pre-treatment	Mid-treatment	Post-treatment	3-Month follow-up	6-Month follow-up	12-Month follow-up
BDI II (Total)	(02) Eve	1	4	2	1	0	0
	(03) Matt	10	12	5	10	11	5
	(06) Hope	7	0	-	-	12	0
	(07) Joy	0	0	0	0	0	0
	(09) Sid	22*	15*	10*	16*	19*	15*
	(12) Ron	4	3	3	4	4	-
STAI-T (T-score)	(02) Eve	46	52	45	42	44	40
	(03) Matt	55	53	49	47	45	41
	(06) Hope	60*	50	-	-	70*	51
	(07) Joy	51	42	42	46	67*	37
	(09) Sid	80*	63*	75*	73*	69*	68*
	(12) Ron	42	45	40	40	37	-

* = Clinically elevated scores (compared with age and or gender norms)

Note: BDI II = Beck Depression Inventory II; STAI-T (*T*-score) = State Trait Anxiety Inventory (*T* score); - data incomplete or not obtained.

Therapy

Evaluation included an assessment of the child-therapist relationship and treatment satisfaction. These factors were assessed with the Child's Perception of Therapeutic Relationship (CPTR) and the Recall of Content Questionnaire (RCQ) respectively.

CPTR

Following treatment, all children reported a strong positive relationship with the therapist as indicated by mean ratings of 3.1 to 4.9 out of a possible score of 5 (see Appendix I, Table I.3.).

RCQ

Child responses to the RCQ at post-treatment indicated that learning to cope with their fears was the most 'important' factor in the programme. Factors stated by three or more children as being 'liked' about the programme included trading in points for rewards ($n = 4$) and making a video ($n = 3$). Children did not identify any programme factors as being 'unimportant'. Two factors were identified as being 'disliked' about the

programme. These included doing disliked or anxiety provoking role-plays ($n = 2$) and homework ($n = 1$). At 12-month follow-up, the same treatment factors continued to be identified as being important and liked. Two children identified learning to cope as important, and three children identified making a video and trading in points as liked. At 12-month follow-up, all children continued to report no unimportant factors, and one child continued to report that he had disliked role-playing anxiety-provoking situations. For a list of responses to RCQ questions, see Appendix I, Table I.4.

Following treatment and at 12-month follow-up, children were also asked if they remembered the four 'FEAR' steps taught in the first half of treatment and utilised in the second half of treatment. Following treatment, all children ($n = 6$) reported that they remembered and were using the FEAR steps. At 12-month follow-up, four of the five children assessed continued to report that they remembered the FEAR steps. Three of these children also indicated that they did not always use them anymore; one (Hope) reported that she did not use them at all anymore. However, all five children reported that they remembered and continued to use relaxation (the first FEAR step) as a coping strategy when feeling anxious.

Post-treatment parent reports on the RCQ specified several factors as 'important' about the programme. Identified factors included 1) reduced pressure on parents due to the child focused nature of the programme ($n = 3$) and 2) the development of children's coping skills ($n = 6$). Additional programme factors reported by three or more of the parents as being liked or important related to the therapist-child relationship ($n = 3$) and a noticeable, positive change in children's anxious behaviour ($n = 5$). One parent identified the length of the programme as being an unimportant factor. Three parents identified filling in questionnaires as the factor that was disliked about the programme. No other factors were identified as being disliked or unimportant. At 12-month follow-up similar important, unimportant, and disliked factors continued to be reported. Two of the five parents identified the therapist-parent relationship, and two indicated factors related to the development of children's coping skills. One parent identified the length of the programme as being unimportant and one parent identified the completion of weekly forms as being disliked. For a list of parent responses to RCQ questions, see Appendix I, Table I.4.

Following treatment, all parents indicated that they were satisfied with the treatment programme. Six parents stated that the level of their parental involvement was “good” or “excellent” with three parents also reporting that they felt the programme removed the pressure for them as parents to solve the problem. None of the parents indicated a wish for more parental involvement. Two parents (Eve and Hope’s) reported that a greater level of parental involvement might have caused their children to feel uncomfortable confiding in the therapist. At 12-month follow-up, all parents interviewed ($n = 5$) continued to report that the level of parental involvement had been “good” or “excellent”.

Clinical Significance

Evaluation of treatment outcome also needs to include an assessment of the clinical significance of change that occurred after treatment. Clinical significance refers to the meaningfulness of change. Consistent with previous definitions (Kendall & Grove, 1988), one measure of clinical significance within the current research was defined as change to within normal limits on measures for which normative information was provided. The second measure of clinical significance was defined as change to within normal limits on diagnostic criteria (i.e., diagnostic interviews: ADISC).

Each of the earlier sections had a focus on scores for participants that were initially in the deviant range. These are now summarised. On the parent CBCL Internalising scale, three participants had pre-treatment T -scores within the clinical range (≥ 67). At mid- and post-treatment, two were within normal limits. At 12-month follow-up, all participants were in the normal range. Three of the five children whose initial CBCL Anxious/Depressed T -scores were in the clinical range moved out of that by mid-treatment; by post-treatment, four of the five. Treatment gains continued or were maintained across post-treatment, 3-, 6- and 12-month follow-up. By 12-month follow-up, all T -scores no longer fell within the clinical range.

In terms of self-reports two participants reported elevated pre-treatment RCMAS and STAIC-T scores. Mid-treatment, post-treatment and 3-, 6- and 12-month follow-up results indicated clinically significant changes on measures for both of these participants.

In terms of diagnosis, by mid-treatment two of the six CBT participants no longer met diagnostic criteria; at post-treatment, three of the five participants who completed treatment no longer met diagnostic criteria for an anxiety disorder. By 12-month follow-up, no participant met criteria for an anxiety disorder.

Individual Case Study Results: Behavioural treatment

Child Diagnoses

Table 8.6 shows that three of the six BT participants met diagnostic criteria for more than one anxiety disorder at pre-treatment. At post-treatment, all no longer met diagnosis for their primary disorder and five of the six participants no longer met criteria for any disorder. The remaining participant's (Cory) diagnostic severity rating for a secondary disorder of GAD decreased from severe to moderate pre- to post-treatment. Treatment gains were generally maintained for five of the six participants across 3-, 6- and 12-month follow-up. At 12-month follow-up, one participant (Job) again met criteria for his primary anxiety disorder.

Table 8.6. BT Participants' Diagnoses Over Time

Participant	Age	Sex	Assessment Points				
			Pre-treatment	Post-treatment	3-Month follow-up	6-Month follow-up	12-Month follow-up
(01) Carl	6	M	SAD	ND	ND	ND	ND
(04) Cory	11	M	SP SAD GAD Sp P PD	GAD	GAD	ND	ND
(05) Job	9	M	SAD	ND	ND	ND	SAD
(08) Rose	10	F	SAD GAD SP	ND	ND	SAD	ND
(10) Bob	10	M	GAD SP	ND	ND	ND	ND
(11) Sam	9	M	GAD	ND	ND	ND	ND

Note: M = male; F = female; ND = No Diagnosis; SAD = Separation Anxiety Disorder; SP = Social Phobia; GAD = Generalised Anxiety Disorder; Sp P = Specific Phobia; PD = Panic Disorder; AP = Agoraphobia without History of Panic Disorder; PTSD = Post-Traumatic Stress Disorder; - = data not obtained. The primary anxiety diagnosis for each participant is noted in bold.

Child Reports

FSSC-R

Table 8.7 shows that pre-treatment FSSC-R intensity scores for one participant (Bob) was elevated compared with gender related norms ($167 > 1$ SD: Ollendick et al., 1989). At post-treatment, Bob reported scores within the normal range. Overall reductions occurred for three participants pre- to post-treatment. Of the others, two participants (Carl and Sam) continued to report similar scores and one participant (Job) reported an elevated score. Compared to pre-treatment, score reductions were reported by all participants across 3-, 6- and 12-month follow-up.

RCMAS

Table 8.7 shows a pre- to post-treatment reduction in the RCMAS *T*-scores to within normal limits for the two participants (Rose and Bob) with elevated pre-treatment scores (i.e., ≥ 60). Of the others, all reported reduced pre- to post-treatment scores. Post-treatment reductions in *T*-scores continued or were maintained for five of the six participants across 3-, 6- and 12-month follow-up. One participant (Rose) reported a gradual increase in scores across the follow-up points, although she remained within normal limits and below her pre-treatment score.

STAIC-S

Table 8.7 shows that STAIC-S *T*-scores were within the normal range for five of the participants at pre-treatment. The sixth participant (Sam) did not adequately complete the pre-treatment measure. Post-treatment and follow-up scores across 3-, 6- and 12-months remained stable or decreased for three of the five participants who provided pre-treatment data. Of the other two participants (Job and Rose), both reported an increase in state anxiety at post-treatment and across follow-up. At 12-month follow-up, Job reported a *T*-score outside of the normal range (≥ 60).

STAIC-T

Pre- to post-treatment scores on the STAIC-T showed a reduction in chronic anxiety for the two children with pre-treatment scores ≥ 60 . Observed reductions were maintained or continued across 3-, 6- and 12-month follow-up. Of the others, three reported a decrease or maintenance of normal scores at post-treatment and across follow-up; one

(Job) reported an increase in *T*-score at post-treatment and across follow-up. At the 12-month assessment point, Job's *T*-scores had increased to a level of some concern.

CDI

Table 8.7 shows that the three BT participants with moderate levels of depressive symptoms (CDI > 13: Cole et al., 1998) at pre-treatment were within the normal range following treatment. Of the others, all reported reduced or similar CDI scores following treatment. Post-treatment reductions were maintained or continued for four of the participants across follow-up. In contrast, two participants (Job and Rose) reported increased scores across follow-up. Job, while initially reporting a decrease in symptoms at post-treatment, reported scores of clinical concern across 3-, 6- and 12-month follow-up; Rose reported a marked increase in her CDI score at the 12-month follow-up compared with previous CDI scores.

NASSQ

Table 8.7 shows that the three children (Cory, Rose, Job) with elevated pre-treatment scores reported notably reduced scores at post-treatment. Of the others, post-treatment scores were similar to those reported at pre-treatment. Post-treatment scores were generally maintained or decreased for four participants across 3-, 6- and 12-month follow-up. In contrast, Job and Rose, while reporting initial decreases in pre- to post-treatment scores, reported increases across follow-up; both reporting follow-up scores similar to those reported at pre-treatment.

CQ-C

Participant mean CQ-C scores on the three questions related to individualised anxiety provoking situations showed positive changes from pre- to post-treatment for all participants. Three participants reported increased mean scores of three or more points. At post-treatment, five children reported moderate coping skills: ≥ 4 . Treatment gains were generally maintained or continued for three of the participants across 3-, 6- and 12-month follow-up. The remaining three participants (Job, Rose and Sam) all reported a slight decrease in coping ability (≤ 1.0) across follow-up, though at 12-month follow-up scores remained lower than those at post-treatment for two of these (See Table 8.7).

Participant CQ-C scores on the fourth question, assessing how much children perceived treatment would help them feel less upset (at post treatment, how much treatment *has* helped them feel less upset) were generally high. Four children (Carl, Cory, Rose and Ben) reported initial scores of four or higher (reported range = 4 to 7). These scores remained stable or increased across treatment. Post-treatment scores were comparable with those reported prior to and across treatment. The remaining two participants (Job and Sam) reported initially low scores (CQ-C = 2 and 3, respectively). These scores improved notably across treatment, remaining stable across follow-up (for a summary of scores, see Appendix I, Table I.1).

Parent Reports

STAIC-T-P

Table 8.8 shows parent STAIC-T-P pre- to post-treatment scores reduced for all six BT participants, with marked reductions of 24 or more points for four participants (Cory, Job, Rose, and Sam). Post-treatment scores generally fluctuated and increased across the 3-, 6- and 12-month follow-up assessment points. Despite these fluctuations, scores remained considerably lower than those reported at pre-treatment. The STAIC-T-P scores for Cory, Job, Rose and Sam at 12-month follow-up showed reductions of 15 or more points compared to pre-treatment.

CQ-P

Parent reports of children's coping (scores averaged across the child's three target complaints) showed positive changes for all participants pre- to post-treatment with coping skills scores ≥ 4 . Post-treatment coping skills, across 3-, 6- and 12-month follow-up, while showing slight reductions were generally maintained; all scores remained much higher than at pre-treatment (see Table 8.8).

Table 8.7. Child Self-Report Scores on Outcome Measures for BT Condition.

Measure	Participant	Assessment Points				
		Pre-treatment	Post-treatment	3-Month follow-up	6-Month follow-up	12-Month follow-up
FSSC-R (Total)	(01) Carl	106	113	88	92	88
	(04) Cory	129	106	95	85	93
	(05) Job	148	167	137	115	137
	(08) Rose	146	125	123	110	-
	(10) Bob	167*	100	108	93	93
	(11) Sam	134	134	120	116	93
	RCMAS (T-score)	(01) Carl	36	33	33	35
	(04) Cory	53	45	35	31	35
	(05) Job	51	50	52	44	49
	(08) Rose	62*	47	48	53	55
	(10) Bob	62*	38	44	41	32
	(11) Sam	56	51	36	39	31
STAIC-S (T-score)	(01) Carl	35	35	30	35	30
	(04) Cory	48	54	45	45	53
	(05) Job	45	51	59	51	62*
	(08) Rose	53	55	50	-	57
	(10) Bob	54	30	33	30	31
	(11) Sam	-	37	44	35	47
	STAIC-T (T-score)	(01) Carl	38	39	33	34
(04) Cory		51	36	29	21	27
(05) Job		45	51	51	50	60*
(08) Rose		70*	48	52	-	47
(10) Bob		64*	31	41	37	21
(11) Sam		45	44	38	39	37
CDI (Total)		(01) Carl	2	4	3	4
	(04) Cory	13*	7	1	1	1
	(05) Job	13*	8	15*	19*	18*
	(08) Rose	11	9	11	8	15*
	(10) Bob	14*	6	7	7	3
	(11) Sam	7	7	2	3	2
	NASSQ (Mean)	(01) Carl	1.00	1.00	1.00	1.00
(04) Cory		2.36	1.33	1.21	1.18	1.26
(05) Job		1.93	1.14	1.50	1.79	1.64
(08) Rose		1.93	1.36	-	1.72	2.01
(10) Bob		1.14	1.07	1.00	1.00	1.08
(11) Sam		1.36	1.50	1.00	1.14	1.00
CQ-C (Mean)		(01) Carl	3.0	6.0	7.0	4.7
	(04) Cory	1.7	2.7	4.0	2.7	6.7
	(05) Job	2.0	4.7	3.3	4.3	3.7
	(08) Rose	1.3	4.7	4.7	4.0	4.0
	(10) Bob	1.7	6.0	5.7	5.3	7.0
	(11) Sam	4.0	5.0	6.0	5.3	4.0

* = Clinically elevated scores (compared with age and or gender norms)

Note: FSSC-R = Fear Survey for Children – Revised; STAIC-S = State Trait Anxiety Inventory for Children – State; STAIC-T = State Trait Anxiety Inventory for Children – Trait; CDI = Child Depression Inventory; NASSQ = Negative Affect Self-Statement Questionnaire; CQ-C = Coping Questionnaire for Children; - = data incomplete or not obtained

CBCL

Parent reports of children's internalising and externalising problems as measured by the CBCL/4-18 indicated improvement post-treatment. Table 8.8 indicates that at pre-treatment, five BT participants had internalising T -scores in the clinical range ($T \geq 67$) and five had anxiety/depression scale T -scores in the clinical range. At post-treatment, parents reported notable improvements on both internalising and anxiety/depression scores. At post-treatment, three of the five participants with elevated internalising scores and all with elevated anxiety/depression scores reduced to within the normal range. Participants' post-treatment scores were generally maintained or continued to decrease across follow-up. At 6- and 12-month follow-up, all participants were within the normal range on both subscales.

Participants externalising T -scores generally improved following treatment. Of the two participants with elevated pre-treatment scores (≥ 67 ; Rose and Sam), one was within normal limits following treatment. Post-treatment externalising T -scores, with the exception of occasional fluctuations, were maintained or improved across 3-, 6- and 12-month follow-up. While Rose's mother reported externalising scores within the normal range at 3- and 6-months, scores tended to be elevated and the 12-month follow-up score, as with pre- and post-treatment scores, was again within the clinical range (see Table 8.8).

Table 8.8. Parent Scores on Child Outcome Measures for BT Condition.

Measure	Participant	Assessment Points				
		Pre-treatment	Post-treatment	3-Month follow-up	6-Month follow-up	12-Month follow-up
STAIC-T-P (Total)	(01) Carl	50	41	41	-	41
	(04) Cory	64	33	37	31	35
	(05) Job	59	30	42	47	38
	(08) Rose	60	36	42	46	45
	(10) Bob	46	38	38	36	40
	(11) Sam	63	27	32	31	30
CQ-P (Mean)	(01) Carl	2.3	5.3	5.3	-	5.7
	(04) Cory	1	6	6	5	5.7
	(05) Job	2	3.3	5	4.3	5.3
	(08) Rose	3	5	5.7	5	4.7
	(10) Bob	2	4.7	4	4	5.3
	(11) Sam	1.3	6.3	6	5.3	6.0
CBCL (Int. T)	(01) Carl	64	59	60	-	53
	(04) Cory	76*	68*	62	62	53
	(05) Job	75*	55	63	61	57
	(08) Rose	75*	71*	68*	64	65
	(10) Bob	72*	59	60	57	66
	(11) Sam	82*	46	40	43	34
CBCL (Anx/Dep T)	(01) Carl	62	51	58	-	55
	(04) Cory	72*	62	57	60	50
	(05) Job	79*	58	64	64	55
	(08) Rose	69*	65	66	64	63
	(10) Bob	68*	55	58	55	66
	(11) Sam	88*	52	50	50	50
CBCL (Ext. T)	(01) Carl	43	35	35	-	35
	(04) Cory	62	52	58	63	61
	(05) Job	50	43	43	41	35
	(08) Rose	74*	70*	65	64	76*
	(10) Bob	65	46	53	54	56
	(11) Sam	73*	60	43	49	53

* = Clinically elevated scores (compared with age and or gender norms)

Note: STAIC-T-P = State Trait Anxiety Inventory for Children –Trait, Parent Version; CQ-P = Coping Questionnaire for Children, Parent report; CBCL (Int. T) = Child Behaviour Checklist (Internalising T-score); CBCL (Ext. T) = Child Behaviour Checklist (Externalising T-score); CBCL (Anx/Dep T) = Child Behaviour Checklist (Anxiety/Depression scale T-score); - = data incomplete or not obtained.

Teacher Reports

Table 8.9 shows that at pre-treatment, five of the six BT children were reported by teachers to have internalising and externalising scores within the normal range. The other participant's (Job), internalising behaviour was noted to be of clinical concern (CBCL T -score ≥ 67). At post-treatment, all participants were within the normal range for internalising and externalising behaviours. Participants' post-treatment scores were generally stable or improved across 3-, 6- and 12-month follow-up. The exceptions were Carl and Cory who had increased scores across follow-up, with elevated scores at 12-month follow-up.

Table 8.9. Teacher Scores on Measures on Child Outcome Measures for BT Participants.

Measure	Participant	Assessment Points				
		Pre-treatment	Post-treatment	3-Month follow-up	6-Month follow-up	12-Month follow-up
TRF (Int. T)	(01) Carl	48	43	56	64	73*
	(04) Cory	36	57	56	51	61
	(05) Job	71*	46	46	48	43
	(08) Rose	51	37	37	42	45
	(10) Bob	48	54	46	46	56
	(11) Sam	57	53	36	51	-
TRF (Ext. T)	(01) Carl	50	38	38	39	50
	(04) Cory	39	40	40	40	51
	(05) Job	65	51	48	39	58
	(08) Rose	62	42	42	32	37
	(10) Bob	53	56	53	46	54
	(11) Sam	39	39	46	39	-

* = Clinically elevated scores (compared with age and or gender norms)

Note: TRF (Int. T) = Teacher Report Form (Internalising T -score); TRF (Ext. T) = Teacher Report Form (Externalising T -score); - = not obtained or consent declined.

Parent and Child Reports Across Baseline, Treatment and Post-Treatment

STAIC-T-P and STAIC-T

Figures 8.5 and 8.6 show that with the exception of some initial decrease in trait anxiety following the first assessment, parent and child reporting was generally stable across the

baseline phase. Overall, baseline scores show a decrease in parent and child reports of children's trait anxiety scores for five participants and an increase for one participant (Bob: see Figure 8.6).

Parent and child scores across treatment sessions, while fluctuating somewhat, showed a small overall decline in trait anxiety. Compared with post-treatment, 3-, 6- and 12-month follow-up scores for four participants, while showing some increased scores, showed an overall decline or maintenance of post-treatment gains. Of the others, Job's parent and self-report scores increased across follow-up, with Job reporting a *T*-score within the clinical range at 12-months post-treatment. Rose's post-treatment, parent reported scores showed a steady increase across follow-up.

CQ-P and CQ-C

Figures 8.7 and 8.8 show that stable baseline phases were established for parent and or child reports of children's coping scores for two participants (Sam and Bob), with small fluctuations (≤ 1.0) across mean scores. Of the others, stable reporting is seen across three consecutive points for Carl, Cory and Rose where reporting from the first one to two sessions are included (see Figure 8.7). A stable baseline was not observed for Job (see Figure 8.8). Overall, scores across baseline show increases in coping for four participants; parent and or child scores showed an increase of two or more points across baseline (Carl, Cory, Rose and Job). Of the others, Sam and Bob's child-reported scores declined while parent reported scores remained approximately the same or increased slightly.

Parent and child treatment session scores, while showing some fluctuation, showed that coping-scores increased across treatment for five of the six participants. Notably, Job's (Figure 8.8) post-treatment scores were similar to those reported prior to treatment. Compared with post-treatment, 3-, 6- and 12-month follow-up scores, while fluctuating somewhat, showed post-treatment gains were maintained or increased for five participants.

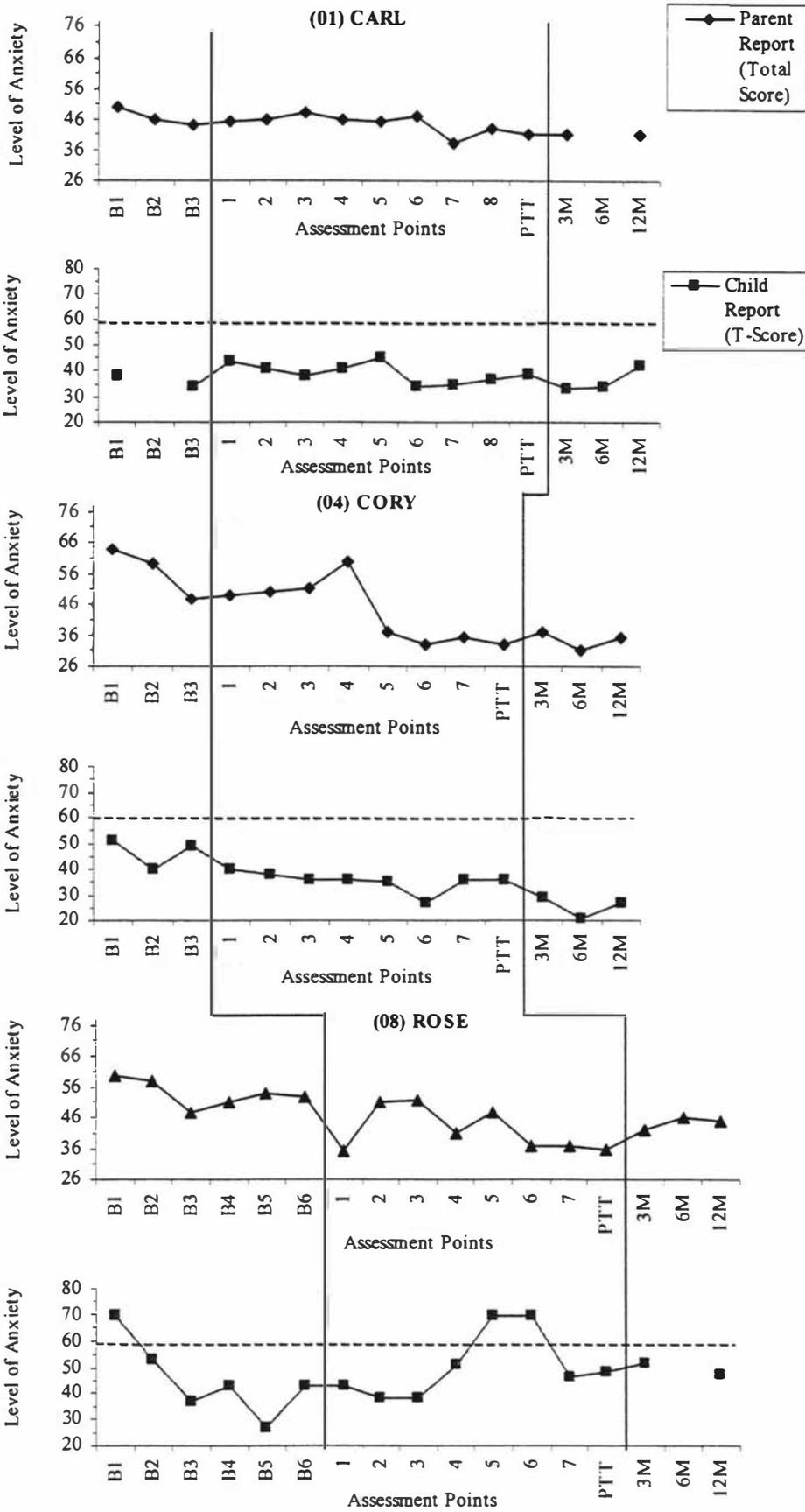


Figure 8.5. Changes in parent and child reported child trait anxiety (STAIC-T-P and STAIC-T) across assessment and treatment sessions for Carl, Cory and Rose. B1 to B6 = weekly baseline points, 1 to 8 = weekly treatment sessions, PTT = post-treatment, and 3M, 6M and 12M = 3-, 6- and 12-month follow-up assessment points respectively.

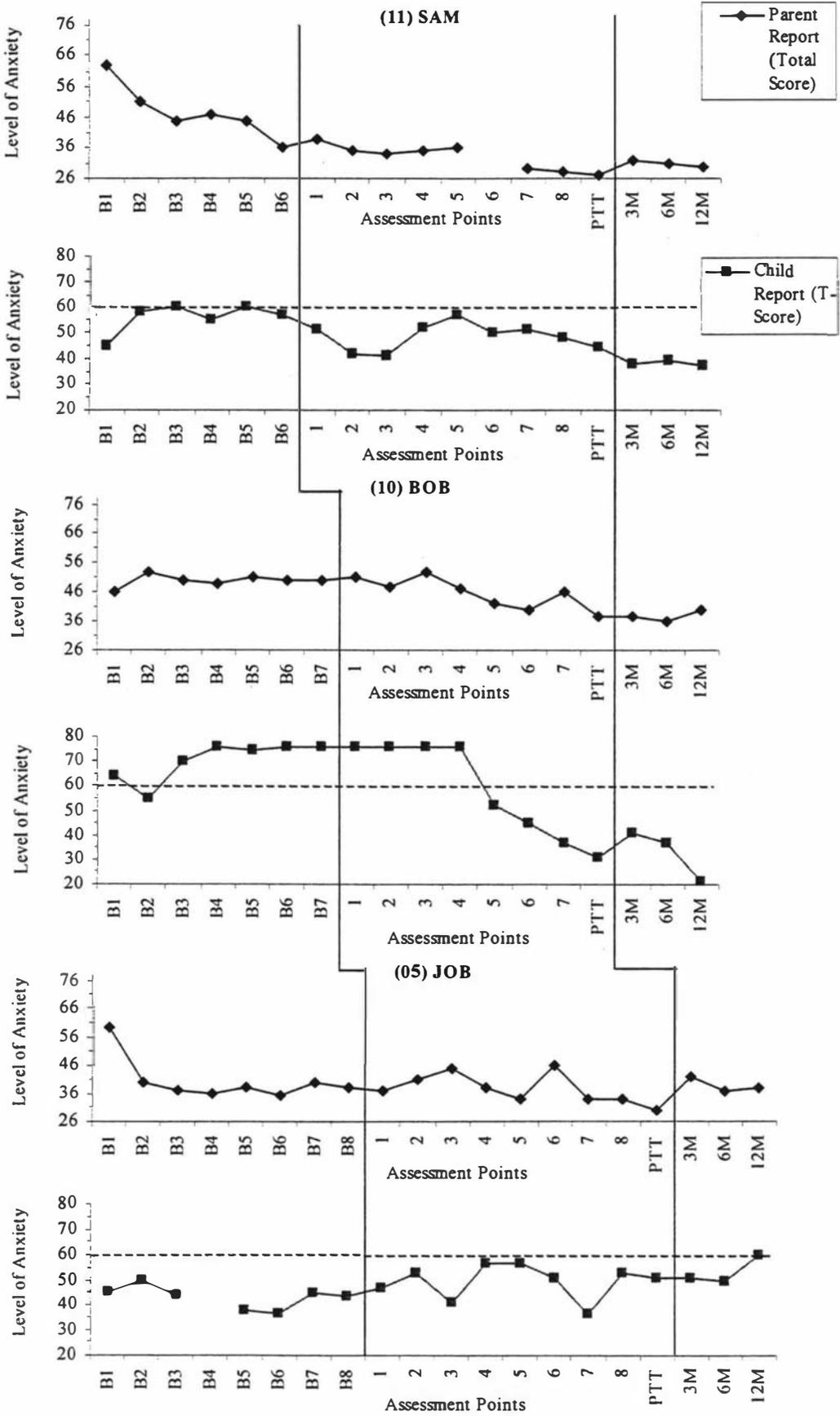


Figure 8.6. Changes in parent and child reported child trait anxiety (STAIC-T-P and STAIC-T) across assessment and treatment sessions for Sam, Bob and Job. B1 to B8 = weekly baseline points, 1 to 8 = weekly treatment sessions, PTT = post-treatment, and 3M, 6M and 12M = 3-, 6- and 12-month follow-up assessment points respectively.

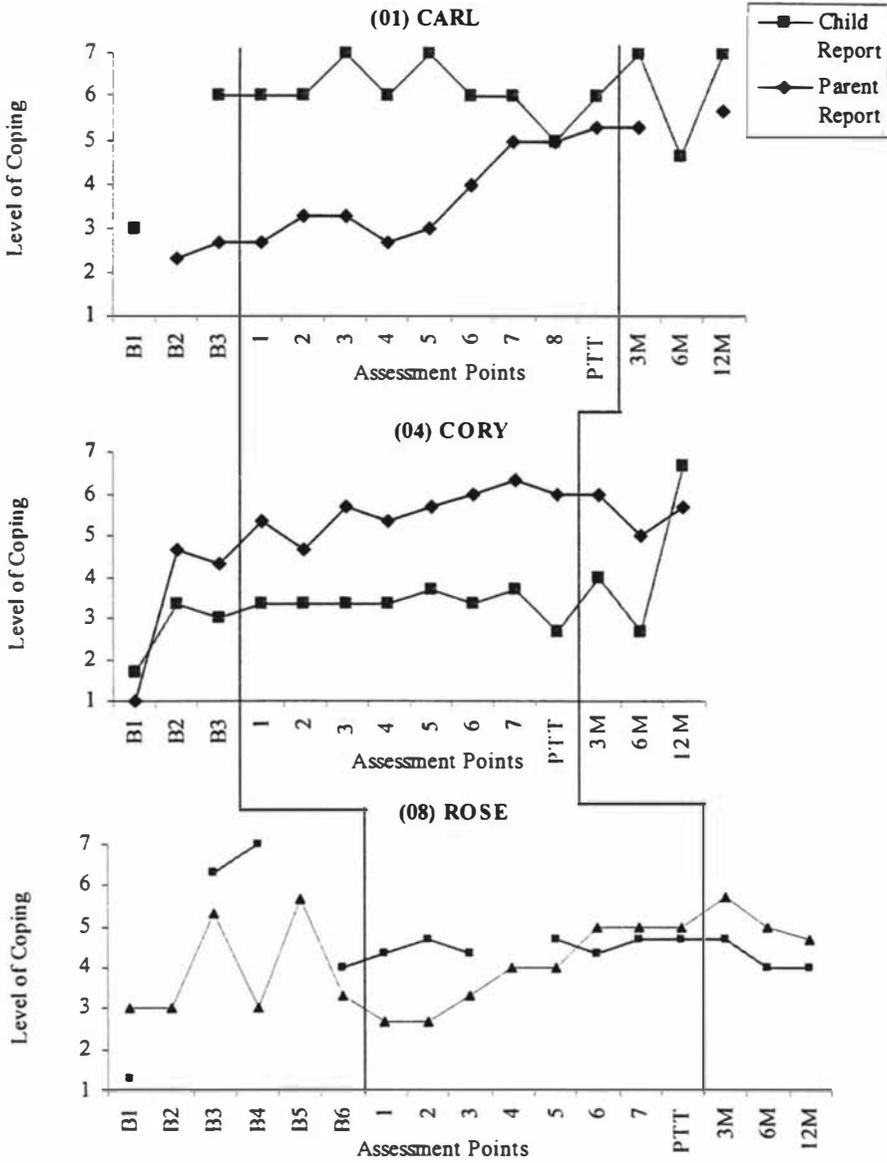


Figure 8.7. Changes in parent and child reported coping skills (mean CQ score for three target complaints across assessment and treatment sessions) for Carl, Cory and Rose. B1 to B6 = weekly baseline points, 1 to 8 = weekly treatment sessions, PTT = post-treatment, and 3M, 6M and 12M = 3-, 6- and 12-month follow-up assessment points respectively.

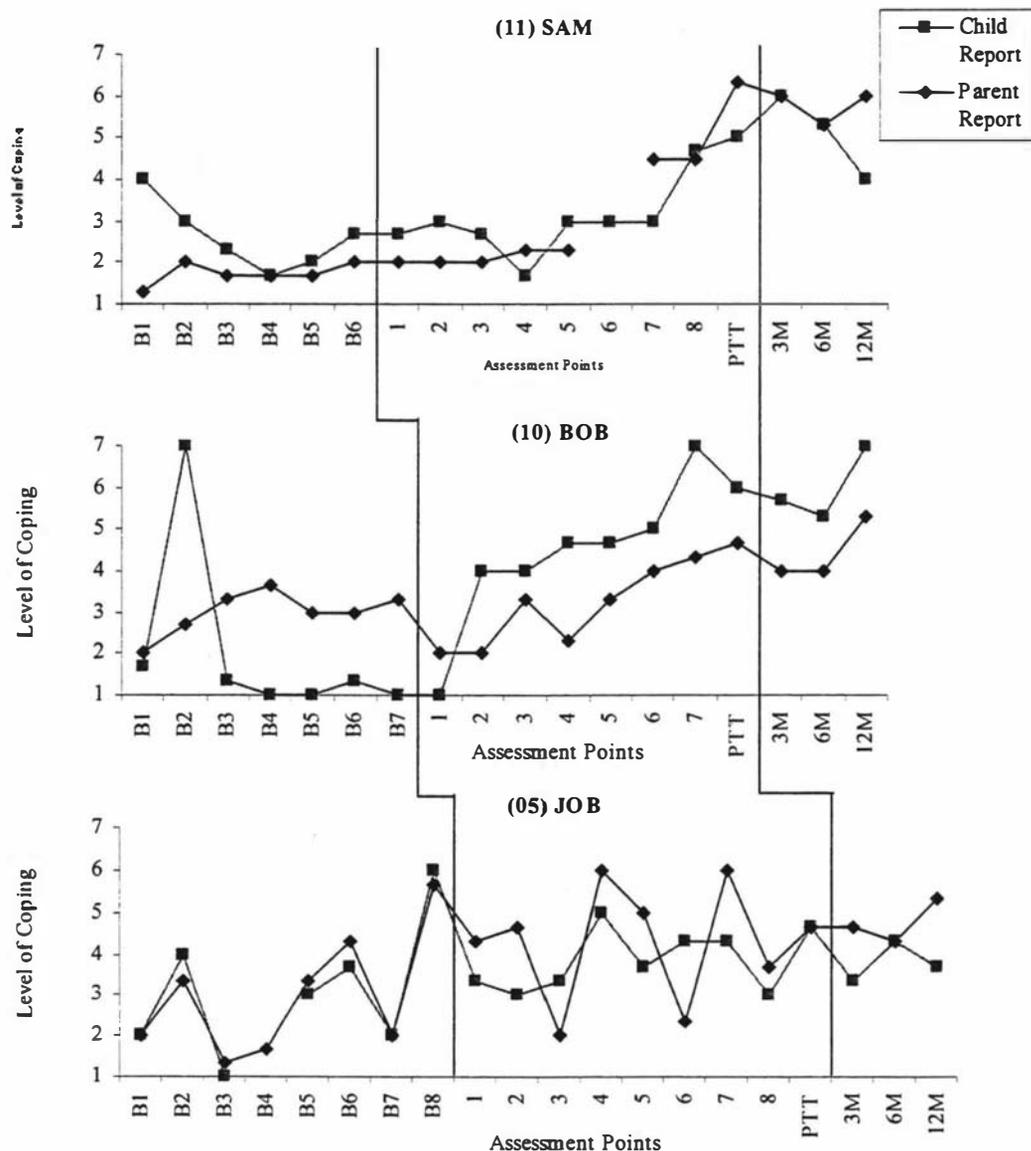


Figure 8.8. Changes in parent and child reported coping skills (mean CQ score for three target complaints across assessment and treatment sessions) for Sam, Bob and Job. B1 to B8 = weekly baseline points, 1 to 8 = weekly treatment sessions, PTT = post-treatment, and 3M, 6M and 12M = 3-, 6- and 12-month follow-up assessment points respectively.

Parent Self-Report

BDI-II

Table 8.10 shows that scores on the BDI-II were within normal range for four of the parents. Of the others, Job and Sam's mothers' scores were mildly and severely elevated (scores = 19 and 29, respectively). At post-treatment, a reduction of 13 or more points occurred for Job's and Sam's mothers, reducing scores to within the normal range. Post-treatment reductions were generally maintained across 3-, 6- and 12-month follow-up. Notably, while Carl's mother reported an elevated score at 3-month follow-up, elevated scores were not reported at any other assessment point.

STAI-T

Table 8.10 shows that the self-reported trait-anxiety scores, of two parents, were outside of the normal range at pre-treatment. Compared with normative data (Spielberger, 1983), Job's mother reported a *T*-score in the mild to moderate range (greater than 1 SD above the mean: ≥ 60); Sam's mother, a score in the high range (greater than 2 SD above the mean: ≥ 70). At post-treatment, meaningful changes occurred for these two parents, both reporting scores within the normal range. Of the others, scores decreased or remained relatively stable. Compared with post-treatment scores, parent's 3-, 6- and 12-month follow-up scores, while showing some fluctuations (e.g., Rose's mother's 3-month score), were maintained or continued to decrease for four parents. Of the others, Job's mother once again reported an elevated score at 12-month follow-up, as did Sam's at 6- and 12-month follow-up. However, both reported all scores at these intervals to be lower than pre-treatment levels.

Table 8.10. BT Parent's Self-Report Scores on Outcome Measures

Measure	Participant	Assessment Points				
		Pre-treatment	Post-treatment	3-Month follow-up	6-Month follow-up	12-Month follow-up
BDI-II (Total)	(01) Carl	3	5	18*	-	1
	(04) Cory	8	7	5	5	1
	(05) Job	19*	6	8	1	5
	(08) Rose	5	4	5	4	9
	(10) Bob	4	3	3	1	2
	(11) Sam	29*	2	2	12	9
STAI-T (T-score)	(01) Carl	49	44	47	-	41
	(04) Cory	45	37	45	52	54
	(05) Job	67*	52	56	51	61*
	(08) Rose	57	56	61*	52	54
	(10) Bob	54	48	44	53	46
	(11) Sam	80*	51	54	71*	67*

* = Clinically elevated scores (compared with age and or gender norms)

Note: BDI II = Beck Depression Inventory II; STAI-T (T) = State Trait Anxiety Inventory (T-score); - = data incomplete or not obtained.

Therapy

Evaluation included an assessment of the child-therapist relationship and treatment satisfaction. These factors were assessed with the Child's Perception of Therapeutic Relationship (CPTR) and the Recall of Content Questionnaire (RCQ) respectively.

CPTR

Following treatment, all children reported a positive relationship with the therapist as indicated by mean ratings of 3.0 to 4.7 from a potential range of 1 to 5 (see Appendix I, Table I.3).

RCQ

Child responses to the RCQ at post-treatment showed that all children who received BT remembered doing the relaxation exercises and the last treatment session activity: creating a brief advertisement (on video) designed to help other children cope with their fears. Children identified relaxation and learning to cope with their fears as the most 'important' factors in the programme. Factors reported by three or more children as

being ‘liked’ about the programme included trading in points for rewards ($n = 4$) and making a video ($n = 3$). Children did not identify any programme factors as being ‘unimportant’. One child identified filling in questionnaires, and one child identified having to role-play anxiety provoking situations as factors that they ‘disliked’ about the programme. At 12-month follow-up the same factors were identified as being ‘important’: learning to cope with fears ($n = 4$) and relaxation ($n = 1$), and as being ‘liked’: making a video ($n = 1$) and trading in points ($n = 2$). At 12-month follow-up, all children continued to report no unimportant factors and the same disliked factors: filling in questionnaires ($n = 1$) and role-playing anxiety provoking or disliked situations ($n = 1$). For a list of responses to RCQ questions see Appendix I, Table I.4.

Following treatment, and at 12-month follow-up, children were asked if they remembered the relaxation exercises taught during treatment. At post-treatment, all children reported that they recalled and used the relaxation techniques taught. At 12-month follow-up, five of the six children continued to report that they remembered the relaxation exercises; two reported that they still used them, the remaining four stated that they only used them “sometimes.”

At post-treatment, parent RCQ responses indicated several factors as being ‘important’ or ‘liked’ about the programme. Factors identified by three or more parents included: relaxation ($n = 6$), coping strategies for the child ($n = 4$), and the child-focused nature of treatment ($n = 3$). Filling in questionnaires was identified as both an ‘unimportant’ ($n = 2$) and ‘disliked’ ($n = 3$) factor of the programme. No other factors were identified as being disliked. At 12-month follow-up, similar important, unimportant, and disliked factors continued to be reported: six parents stated factors related to children’s coping skills (e.g., relaxation), and three factors related to the therapist-child relationship. One parent identified questionnaire forms as being unimportant and one parent identified weekly questionnaire forms as being disliked. For a list of parent responses to RCQ questions see Appendix I, Table I.4.

Following treatment, all parents indicated that they were satisfied with the BT programme. Five parents stated that the level of parental involvement to be “good” or “excellent” with three parents stating that they felt the programme reduced the pressure on them as parents and that they felt informed. The mother of the child (Sam) seen

within a school setting rather than the Massey University Clinic due to transport issues indicated that, while overall she was satisfied with the level of parental involvement, she would have liked to have been even more involved. At 12-month follow-up, all parents indicated that they were satisfied with the programme's level of parental involvement stating that it was "good" or "excellent."

Clinical Significance

An assessment of the clinical significance of change that occurred after treatment, as in the CBT condition, included normative comparison and diagnostic status. Relevant findings are now summarised.

On the parent CBCL Internalising scale, five participants had pre-treatment *T*-scores within the clinical range (≥ 67). At post-treatment, three of the five participants with elevated scores were returned to within normal limits. At the 6- and 12-month follow-up, all participants were within normal limits. All five of the participants with pre-treatment CBCL Anxious/Depressed *T*-scores in the clinical range were within normal limits at post-treatment; scores remained within normal limits across all follow-up assessment points.

In terms of self-reports, two participants reported elevated pre-treatment RCMAS and STAIC-T scores. Rose and Bob's initial *T*-scores on the RCMAS and the STAIC-T were in the clinical range. Post-treatment and 3-, 6- and 12-month follow-up results showed clinically significant changes for both participants. Interestingly, the 12-month follow-up scores on the STAIC-S and the STAIC-T indicated Job, who initially did not fall into the clinical range, now did so.

In addition, at post-treatment, five of the six participants no longer met diagnostic criteria for an anxiety disorder. While one participant (Cory) continued to meet criteria at post-treatment, the level of diagnostic severity was reduced from severe to moderate. At 6-month follow-up, Cory no longer met criteria for an anxiety diagnosis. Two participants were noted to experience a relapse across follow-up. Job again met criteria for an anxiety diagnosis at the 12-month follow-up and Rose again meet criteria for an

anxiety diagnosis at the 6-month follow-up, though she did not meet criteria at the 12-month follow-up.

Comparative Treatment Analyses: Within and between treatment condition *Power and Effect Size*

While the current study is repeated single-case in design, supplementary statistical analyses were conducted to investigate potential differences between the two treatment conditions. In considering results from statistical analyses two different, but related types of errors that may occur need to be considered. The first type of error that may occur is referred to as Type 1 error. A Type 1 error occurs when differences between groups are observed where in fact there is none. The risk of Type 1 error is generally minimised by selecting an appropriate alpha level (traditionally .05 or .01). The second type of error that may occur is referred to as Type 2 error. A Type 2 error occurs when one accepts that there is no difference between the groups when in fact there is (Cohen, 1988).

Within the framework of statistical significance testing, statistical power⁸ estimation is important when interpreting non-significant effects (Cohen, 1988). When statistical power is low, a non-significant result is ambiguous as it may mean that there was no effect, or that there is an effect but the study was not sensitive enough to detect it. Given that power is related to sample size, and the sample size for the current research is very small, the current study runs a greater risk of having a Type 2 error than Type 1. That is, the current study has low power to detect small or moderate⁹ differences between the two treatment conditions. Given this, the reader is reminded that interpretation of statistical results are tentative. A main purpose of the statistical analyses of data was to investigate the effect size (ES) of the two treatment conditions. That is, the strength of association both between treatment condition and time, and between the two interventions. Effect size statistics indicate the relative magnitude of

⁸ Power (1-beta) is the probability of detecting an effect when there is an effect; the probability of rejecting the null hypothesis when it is false. Power is a function of the relationship among three variables involved in statistical inference: statistical significance (alpha), sample size (n), and the difference between groups (effect size; ES).

⁹ Cohen (1988) distinguishes three levels of ES: small, medium and large (.25, .50, and .80, respectively).

variance between means. There are multiple different effect size statistics (e.g., eta squared, Cohen's f , and Cohen's d). Given the nature of the data here, the current study used Cohen's d ¹⁰ (Cohen, 1988). Analyses of treatment effects within treatment condition (CBT and BT, respectively) will now be presented followed by between group analyses. To reduce the potential confound of waitlist time differences the parameters chosen for comparison were the STAIC and CQ (see later section for more details).

Within Group Analyses

CBT: Analyses of treatment effects and maintenance

Paired within samples t -tests were conducted to evaluate the impact of intervention across pre- to mid-treatment and mid- to post-treatment, and across overall treatment (pre- to post-treatment). Change across post-treatment to 12-month follow-up was also investigated.

Child reported STAIC-T scores indicated a significant decrease in STAIC-T scores occurred mid- to post-treatment and pre- to post-treatment. Change across the other assessment periods was non-significant. Child reported CQ-C scores indicated significant increases in coping scores mid- to post-treatment, pre- to post-treatment, and post-treatment to 12-month follow-up. Interestingly, CQ-C scores indicated the greatest amount of positive change occurred post-treatment to 12-month follow-up. Overall, child reported data indicated markedly more change in scores, as evidenced by the ES, following the second half of treatment and across follow-up than across the first half of treatment. See Table 8.11.

Parent reported scores on the STAIC-T-P indicated a significant decrease in scores mid- to post-treatment and pre- to post-treatment. While change occurred across the other assessment periods, it was non-significant. Parent reported CQ-P scores indicated a significant increase in parent perceptions of children's coping pre- to mid-treatment and pre- to post-treatment. While change in parent reported CQ-P scores was not significant mid- to post-treatment, the magnitude of ES's was similar pre- to mid- and mid- to post-treatment. Overall, parent reported data indicated that change across the two treatment

¹⁰ Cohen's $d = M_1 - M_2 / S_p$, where M_1 = mean of the treated group; M_2 = mean of the control group; S_p =

halves was similar and that change across treatment was greater than across follow-up. See Table 8.11.

Table 8.11. Analysis of CBT Effects and Maintenance, Showing Degrees of Freedom (*df*), *t*-scores, and Effect Size (ES)

Assessment Period	<i>df</i>	<i>t</i>	ES
<i>Pre- to mid-treatment</i>			
STAIC-T	5	.58	.07
STAIC-T-P	5	1.93	1.01
CQ-C	5	-1.52	-.44
CQ-P	5	-2.65*	-.82
<i>Mid- to post-treatment</i>			
STAIC-T	4	3.10*	1.32
STAIC-T-P	4	3.44**	1.27
CQ-C	4	-4.76**	-1.16
CQ-P	4	-1.35	-.87
<i>Pre- to post-treatment</i>			
STAIC-T	4	2.48*	1.71
STAIC-T-P	4	2.66*	1.63
CQ-C	4	-7.56***	-1.32
CQ-P	4	-2.38*	-1.61
<i>Post-treatment to 12-month follow-up</i>			
STAIC-T	3	1.62	1.32
STAIC-T-P	3	1.15	.79
CQ-C	3	-3.90*	-2.47
CQ-P	3	-.71	-.28

* $p < .05$, ** $p < .01$, *** $p < .001$.

Note: STAIC-T = State-Trait Anxiety Inventory for Children - Trait; STAIC-T-P = State-Trait Anxiety Inventory for Children – Trait; Parent version; CQ-C = Coping Questionnaire for Children; CQ-P = Coping Questionnaire for Children – Parent version.

pooled within group standard deviation.

BT: Analysis of treatment effects and maintenance

Paired within samples *t*-tests were conducted to evaluate the impact of intervention across treatment and follow-up. Child reported STAIC-T scores indicated a non-significant effect for treatment pre- to post-treatment and post-treatment to 12-month follow-up. Child reported CQ-C scores indicated a significant effect pre- to post-treatment but not post-treatment to 12-month follow-up. Child reported data, while generally non-significant, indicated larger treatment effects, as evidenced by ESs, across treatment than across follow-up. See Table 8.12.

Parent reported scores on the STAIC-T-P indicated a significant decrease in trait anxiety scores pre- to post-treatment and an unexpected, significant increase post-treatment to 12-month follow-up. Parent reported scores on the CQ-P indicated a significant increase in scores pre- to post-treatment, but not post-treatment to 12-month follow-up. Analyses of parent reported scores indicated larger treatment effects across treatment than across follow-up. See Table 8.12.

Table 8.12. Analysis of BT Effects and Maintenance Showing Degrees of Freedom (*df*), *t*-scores, and Effect Size (ES)

Assessment Period	<i>df</i>	<i>T</i>	ES
<i>Pre- to post-treatment</i>			
STAIC-T	5	1.02	.72
STAIC-T-P	5	5.46**	1.88
CQ-C	5	-2.12*	-1.17
CQ-P	5	-4.94**	-2.31
<i>Post-treatment to 12-month follow-up</i>			
STAIC-T	5	.81	.22
STAIC-T-P	5	-2.69*	-.77
CQ-C	5	-.69	-.38
CQ-P	5	-.95	-.42

* $p < .05$, ** $p < .01$, *** $p < .001$.

Note: STAIC-T = State-Trait Anxiety Inventory for Children - Trait; STAIC-T-P = State-Trait Anxiety Inventory for Children – Trait; Parent version; CQ-C = Coping Questionnaire for Children; CQ-P = Coping Questionnaire for Children – Parent version.

Comparative Treatment Group Analyses: Pre-treatment

Diagnoses

Children in each of the treatment groups met criteria for similar primary anxiety disorders. Four of the CBT children met criteria for a primary diagnosis of SAD, and two, GAD. Three of the BT children met criteria for a primary diagnosis of SAD, two GAD, and one, SP. Some children in both groups also met criteria for a secondary anxiety disorder; five of the six CBT children and three of the six BT children met criteria for a secondary anxiety disorder. See Table 8.1 and Table 8.6 (CBT and BT, respectively) for the diagnostic status of individual participants.

Demographics

Demographic variables that were similar across treatment condition included children's living arrangements and level of parental education. Three of the CBT children lived with both parents, two with their mother only, and one time-shared between his parents. Two of the BT children lived with both parents, three with their mother only, and one time-shared between his parents. Similar numbers of parents in each group completed the fifth form, sixth form,¹¹ polytechnic, or university qualifications.

The treatment groups differed on several demographic variables. First, the CBT condition included children who were slightly older than those in the BT condition. At the time of the initial assessment CBT children were aged 7 to 12 years ($M = 10.17$, $SD = 2.48$) while BT children were aged 6 to 11 years ($M = 9.17$, $SD = 1.72$). However, age differences were not found to be statistically significant, $t(10) = .81$, $p > .10$. Second, the CBT group consisted of a smaller numbers of Maori or Maori/European children than in the BT group. One of the six CBT children was identified (by parents) as being of Maori/European descent and five of European descent. Three of the six BT children were identified as being of Maori or Maori/European descent and three of European decent. However, ethnicity distributions across treatment condition were not statistically different from chance effects ($P = .24$; Fishers Exact, $p > .05$).¹² Third, while the CBT group consisted of three males and three females, the BT group

¹¹ Fifth and sixth form are equivalent to grade 10 and 11, respectively.

¹² Analysis using Fisher's Exact rather than chi-square has been carried out where a basic statistical assumption of chi-square has been violated. Specifically, chi-square analyses require a minimum cell frequency of five or more, with no more than 80% of cells breaching this rule. Greater than 80% of cell frequencies for the current data were less than five.

consisted of five males and only one female. Gender distributions across treatment condition were not statistically different from chance effects ($P = .27$; Fishers Exact, $p > .05$). Fourth, parental level of employment and income was higher for CBT parents than BT parents. All CBT parents were employed, with a mean income of \$50,000 (SD = \$17,600). Two of the five BT parents who reported their employment/income status, were unemployed while undertaking further education; the mean income for BT parents was \$35,000 (SD = 20,000). However, as with other comparisons, differences here were not found to be statistically significant, $t(9) = 1.32, p > .10$.

Parent and Child Reports

Comparisons between intervention groups were conducted using child self-reports and parent reports of child trait anxiety and coping (STAIC-T, STAIC-T-P, CQ-C and CQ-P) to assess comparability at initial intake and at pre-treatment. The number and type of assessment measures used to analyse treatment outcome was limited because the selected measures provided scores immediately prior to treatment in addition to baseline assessment scores – all other measures did not provide immediate pre-treatment (i.e., post-waitlist) scores. While it also limited the number of measures assessed and thus decreased the risk of Type 1 error, this was of less concern given that Type 2 error was more of a risk here. Given varying baselines, comparison on other measures was deemed too problematic.

Both non-parametric (Mann-Whitney U tests) and parametric analyses (t -tests) were conducted producing equivalent results. The literature (Allison, Gorman, & Primavera, 1993) recommends that in instances where non-parametric and parametric analyses produce similar results, the latter should be reported. Given this, results from the t -tests are presented in this section.

Analyses of the four targeted initial assessment measures found a significant difference between the two groups on only one measure, mean CQ-P scores, $t(10) = 2.49, p < .05$. Children's coping albeit, at initial assessment was perceived as greater by parents of CBT children ($M = 2.95, SD = .70$) than parents of BT children ($M = 1.93, SD = .72$). The remaining three measures were not found to be significantly different across treatment condition; STAIC-T, $t(10) = .87$, CQ-C, $t(10) = .34$, and STAIC-T-P, $t(10) = .22$, all p 's $> .10$. At pre-treatment assessment (immediately prior to session 1), t -tests

indicated no significant difference between the two treatment conditions on any of the four measures investigated. While CBT parents continued to perceive children as coping 'better' than BT parents, the difference was not significant, $t(10) = 1.59, p = > .10$. Means and standard deviations, including those at initial assessment, mid-treatment (for CBT participants), post-treatment and 12-month follow-up, are presented in Table 8.13.

Table 8.13. Means (M) and Standard Deviations (SD) for Dependent Measures for CBT and BT Treatment Conditions

Measure	CBT					BT			
	IA	PT	MT	PTT	12-M	IA	PT	PTT	12-M
<i>Child</i>									
STAIC-T									
M	51.00	42.00	41.50	32.75	26.25	52.17	50.00	41.50	39.00
SD	12.28	6.33	8.35	4.27	5.50	12.35	14.91	7.56	14.04
CQ-C									
M	2.88	3.99	4.35	5.18	6.68	2.28	3.11	4.85	5.40
SD	1.04	0.99	0.60	0.81	0.29	1.02	1.73	1.21	1.65
<i>Parent</i>									
STAIC-T-P									
M	52.00	47.50	42.25	37.25	33.25	57.00	45.17	34.17	38.17
SD	5.66	7.26	1.26	5.12	4.99	7.32	6.40	5.19	5.19
CQ-P									
M	2.95	3.67	4.43	5.25	5.50	1.93	2.84	5.10	5.45
SD	0.70	0.97	0.89	0.99	0.81	0.72	0.88	1.07	0.46

Note: IA = Initial Assessment; PT = Pre-treatment; MT = Mid-treatment; PTT = Post-treatment; 12-M = 12-month follow-up; STAIC-T = State-Trait Anxiety Inventory for Children - Trait; CQ-C = Coping Questionnaire for Children; STAIC-T-P = State-Trait Anxiety Inventory for Children - Trait; Parent version.

Comparative Treatment Group Analyses: Treatment outcome

Treatment outcome differences between treatment conditions were assessed via two methods: (a) diagnostic status at post-treatment and 6- and 12-month follow-up and (b) independent-samples t -tests comparing child and parent treatment group reports pre- to post-treatment and post-treatment to 12-month follow-up, and ESs (Cohen's d) calculated. To investigate where the majority of change occurred for each intervention group, within-group t -tests were conducted and ESs calculated.

Diagnostic Status

Post-treatment, diagnostic status across the two conditions was similar.¹³ Three of the five CBT participants who completed treatment no longer met criteria for any anxiety disorder; all five no longer met criteria for their primary anxiety disorder. At post-treatment, five of the six BT participants no longer met criteria for any anxiety disorder; all six no longer met criteria for their primary disorder. Treatment outcome distributions across treatment condition were not statistically different for diagnosis versus no diagnosis ($P = .36$; Fishers Exact, $p > .05$) or primary anxiety disorder versus no primary anxiety disorder ($P = 1.00$; Fishers Exact, $p > .05$).

Long-term follow-up (6- or 12-month) indicated that treatment gains were maintained or continued for all CBT children. However, this was not the case for all BT children. While five of the six BT participants maintained or continued to show treatment gains, one participant relapsed. Job, who no longer met criteria for an anxiety diagnosis following treatment (and at 3- and 6-month follow-up), once again met criteria for his primary diagnosis (i.e., SAD) at 12-month follow-up. While differences in diagnostic outcome across treatment condition existed they were not statistically significant ($P = .54$ and $.60$; Fishers Exact, $p < .05$, 6- and 12-months follow-up, respectively).

Child and Parent Reports

Independent-samples *t*-tests were conducted to compare the impact of the two interventions on children's mean change scores across eight treatment sessions (i.e., CBT: pre- to mid-treatment; BT: pre- to post-treatment), pre- to post-treatment, and post-treatment to 12-month follow-up. The number of measures used to analyse treatment outcome was limited to the four measures previously discussed: STAIC-T, CQ-C, STAIC-T-P and CQ-P. Mean change scores, standard deviations, *T*-scores, and ESs are presented in Table 8.14.

Child and parent reported scores, while non-significant (all p 's $> .10$), indicated that BT (pre- to post-treatment) effected larger mean change scores than the first half of CBT treatment (pre- to mid-treatment) and CBT as a whole (pre- to post-treatment). The one

¹³ Analysis using Fisher's Exact rather than chi-square has been carried out where a basic statistical assumption of chi-square has been violated. See also footnote 5.

exception was STAIC-T scores, which indicated CBT effected larger mean change scores than BT. The magnitude of change, as indicated by ESs, for assessment measures across eight sessions of treatment (i.e., CBT: pre- to mid-treatment; BT: pre- to post-treatment) was generally large. The magnitude of change pre- to post-treatment was small to large.

Child and parent reported data across 12-month follow-up, while generally non-significant indicated that overall CBT effected larger mean change scores than BT. Overall, the magnitude of change across follow-up was moderate to large.

Of the follow-up report scores a significant difference was found for STAIC-T-P scores only. The STAIC-T-P scores indicated CBT effected significantly larger mean change scores than BT post-treatment to 12-month follow-up, indicating CBT parents perceived children to have significantly more change in trait anxiety symptoms compared to BT parents. While CBT parent STAIC-T-P scores continued to decrease post-treatment to 12-month follow-up, BT parents reported an unexpected increase in scores.

Table 8.14. Analysis of Treatment Effects between Treatment Condition and across Time showing Means (M) and Standard Deviations (SD) for Mean Change Scores, Degrees of Freedom (*df*), *t*-scores (*t*) and Effect Sizes (ES).

Assessment Period	CBT		BT		<i>df</i>	<i>t</i>	ES
	M	(SD)	M	(SD)			
<i>Pre- to Mid-treatment</i>							
STAIC-T	11.50	(10.25)	<i>(See below:</i>		10	.07	.04
STAIC-T-P	11.00	(4.90)	<i>Pre- to Post-</i>		10	1.67	-.94
CQ-C	1.68	(1.08)	<i>treatment)</i>		10	1.27	-.74
CQ-P	1.72	(1.29)			10	1.52	-.88
<i>Pre- to Post-treatment</i>							
STAIC-T	23.00	(10.34)	11.00	(14.90)	9	1.52	.94
STAIC-T-P	16.80	(7.42)	19.50	(11.81)	9	.44	-.27
CQ-C	2.54	(1.12)	2.57	(1.33)	9	.04	-.03
CQ-P	2.06	(1.80)	3.00	(1.61)	9	.91	-.55
<i>Post-treatment to 12-month follow-up</i>							
STAIC-T	6.50	(6.76)	3.50	(7.04)	8	.67	.44
STAIC-T-P	4.00	(6.98)	-4.00	(3.63)	8	*2.41	1.44
CQ-C	1.50	(.77)	.55	(1.93)	8	.92	.65
CQ-P	.25	(.71)	.35	(.90)	8	.19	-.12

* $p < .05$

Note: STAIC-T = State-Trait Anxiety Inventory for Children - Trait; STAIC-T-P = State-Trait Anxiety Inventory for Children – Trait, Parent version; CQ-C = Coping Questionnaire for Children; CQ-P = Coping Questionnaire for Children, Parent version.

CHAPTER 9

DISCUSSION

This chapter is presented in four sections. The first briefly outlines the current study's results with reference to the research objectives and the hypotheses. The second highlights the theoretical and practical implications of the results. The third outlines limitations and makes suggestions for future research. The fourth presents conclusions.

Summary of Major Findings

The current research met three primary objectives. First, it replicated previous research findings for Kendall and colleagues' (1990) Coping Cat CBT programme within a New Zealand sample. Second, it investigated the effects of the behaviourally based components of the CBT programme. Third, it compared the immediate and long-term treatment effects of the CBT programme as a whole with the behavioural components alone (BT programme). Results indicated that the majority of participants, regardless of treatment allocation (a) no longer met diagnostic criteria for an anxiety disorder, (b) had an increased ability to cope and decreased anxiety related problems, and (c) maintained treatment gains across 3-, 6-, and 12-month follow-up. Overall findings indicate this study has answered a main question of whether the second half of treatment and resultant gains are a function of follow on from the first half of treatment (see Barrett, Dadds et al., 1996; Barrett et al., 2001; Flannery-Schroeder & Kendall, 2000; Kendall et al., 1997). That is, based on direct comparisons, the BT condition produced notably more change than the first half of CBT and change comparable to the entire CBT package, particularly immediately following treatment. The main difference between conditions was across follow-up measures – the CBT condition showed greater effectiveness. The current research also met a fourth, ancillary objective – the assessment of a child-based treatment on parent emotional functioning.

Two experienced cognitive-behavioural therapists, one of whom was independent from the research project, assessed the treatment protocol for CBT and BT. Both programmes were found to have integrity. The use of an observer, independent of the research project and blind to treatment hypotheses, reduced the risk of any treatment allegiance

when assessing treatment protocol compliance. The use of a multiple baseline design in the current study reduced the likelihood that treatment effects resulted from factors such as maturation or history. Both treatment conditions had low attrition and differences found between participants on important factors (e.g., gender, age and SES) were not statistically significant. Parent satisfaction with treatment was positive for both treatment outcome and level of parental involvement. Several parents commented that increased involvement from them might have impacted negatively on their child's ability to engage in therapy.

Objective One: Replication of Previous Research Findings

The current study met the first objective to replicate previous research findings for the CBT, Coping Cat programme using a New Zealand sample. Results replicated previous treatment outcome studies using various adaptations of this manualised programme (e.g., Barrett, Dadds et al., 1996; Kane & Kendall, 1989; Kendall, 1994; Kendall et al., 1997). Results supported the hypothesis that the programme (Kendall et al., 1990) would be effective within a New Zealand sample of children.

Multimethod assessment (diagnostic, child-self-reports, and parent reports) found treatment gains occurred for all six CBT participants pre- to post-treatment. Relevant measures also indicated clinically significant change for participants. Further, observed ESs for parent and child reports of child coping and trait-anxiety pre- to post-treatment were large (ES = 1.32-1.71). Effect sizes were similar to those reported in previous studies (mean ES = 1.30-1.80, see Huzziff et al., 2004).

Treatment gains were generally maintained across follow-up. At post-treatment, results showed that 60% (3 of 5) of the CBT children who completed both halves of treatment no longer met diagnostic criteria for an anxiety disorder. Of the children who continued to meet criteria for an anxiety disorder, symptomology was reduced and coping in anxiety provoking situations markedly improved. Post-treatment gains were maintained or continued across follow-up for all children in the CBT condition; the children who continued to meet diagnostic criteria for an anxiety disorder at post-treatment no longer did so at 12-month follow-up. The current findings were in keeping with previous research. For example, 64% of children treated in Kendall's 1994 study and 53% of children treated in Kendall et al.'s 1997 study no longer met diagnostic criteria for an

anxiety disorder following treatment. However, this study was seen to produce 100% diagnostic remission in all anxiety diagnoses, both primary and secondary, at one year follow-up whereas previous studies have reported reduced rates (e.g., Barrett, Dadds et al., 1996; Kendall, 1994).

Outcome findings for areas of improved functioning in the current study were similar to those reported by Kendall and associates (Barrett, Dadds et al., 1996; Flannery-Schroeder & Kendall, 2000; Kane & Kendall, 1989; Kendall, 1994; Kendall et al., 1997). Reports on several child and parent measures indicated support for the beneficial treatment effects across a range of functioning areas in the present study. Specifically, improvement was shown on child-reported anxiety, coping, and negative self-talk for five of the six CBT participants and on depressive symptoms for four CBT participants. Parent reports found improvements for children's internalising and externalising behaviours. Using normative comparisons, three of the five CBT children with pre-treatment internalising and anxiety/depression scores within the clinical range on the CBCL were returned to within normal limits following treatment.

With regard to gains across treatment halves, results again supported findings from previous studies (Howard & Kendall, 1996; Kane & Kendall, 1989; Kendall, 1994, see also Huzziff et al., 2004). The current study found both halves of treatment were required for meaningful change. Overall, clinically significant change did not occur until after treatment as a whole was completed. As with previous research findings (Howard & Kendall, 1996; Kendall, 1994), notable changes in children's anxious functioning were not generally observed until after the second, exposure focused half of treatment was completed.

Findings from statistical analyses were consistent with those extrapolated from individual results. Gains across treatment and follow-up indicated the majority of change occurred mid- to post-treatment. Children and parents perceived more positive improvement in children's trait anxiety and coping across the second, exposure-based half of treatment compared with the first, cognitive-based half. While treatment gains were observed across follow-up, they were generally smaller than across treatment (pre- to mid- or mid- to post-treatment). The one exception was in children's perceived coping. Results found a significant increase in children's perceived coping across

follow-up with more positive gains occurring across this period compared to any treatment interval.

Objective Two: The Role of Behavioural Treatment Components

The second research goal was to establish the relative role of the behavioural components within the CBT programme. As expected, results for BT participants found the behavioural components alone sufficient to facilitate clinically meaningful change. The current treatment outcome findings were consistent with previous research findings showing exposure techniques in different treatment approaches are sufficient for clinically meaningful change for anxious children (Beidel et al., 2000; Ollendick & King, 1998). Further, the BT findings support the literature that behavioural techniques have the ability to produce rapid change (Koss & Shiang, 1994). The hypothesis that eight sessions of BT would be more effective than the first eight sessions of CBT was supported. At post-treatment, five of the six children no longer met diagnostic criteria for an anxiety disorder compared with only two children in the CBT programme following a similar number of sessions.

Results only partially supported the hypothesis that treatment outcome for children in the BT programme would be similar to outcome findings for children in the current and previous CBT studies (e.g., Barrett, Dadds et al., 1996; Kane & Kendall, 1989; Kendall, 1994; Kendall et al., 1997). Overall treatment gains were positive, children who participated in the BT programme reported comparable treatment gains following treatment compared with those who completed the CBT programme. While not statistically different, the magnitude of change (as indicated by ESSs) found BT generally effected more positive change in parent and child reports of child trait-anxiety and coping than CBT across the first half of treatment and across treatment as a whole. Some differences were observed across follow-up. Differences in treatment outcome are discussed more within the context of the next hypothesis.

BT outcome findings indicated that BT was effective in reducing children's primary and secondary anxiety diagnoses at post-treatment. Overall, multimethod assessment (diagnostic, child-self-reports, and parent reports) indicated positive treatment gains for all six BT children pre- to post-treatment. Relevant measures also indicated clinically

significant change for participants; treatment gains were generally maintained across follow-up.

At post-treatment, results showed 83% (5 of 6) of the children no longer met diagnostic criteria for an anxiety disorder; 100% no longer met criteria for their primary disorder. The child who continued to meet criteria for an anxiety disorder had reduced symptomology and markedly improved coping at post-treatment. In addition, this child no longer met criteria for his primary disorder at post-treatment and no longer met criteria for any anxiety disorder at 6- and 12-month follow-up. Post-treatment gains for all BT participants were generally maintained or continued across follow-up.

Outcome findings regarding areas of anxiety-related functioning also showed improvement for BT participants. Treatment effects across functioning areas were consistent with those found for the current and previous CBT studies and previous BT studies (e.g., Barrett, Dadds et al., 1996; Beidel et al., 2000; Flannery-Schroeder & Kendall, 2000). Several parent and child measures indicated beneficial effects of treatment across a range of functioning areas. Specifically, BT participants showed improvements across treatment in problematic areas of child-reported anxiety, coping, negative self-talk, and depressive symptoms. Parent reports noted improvements for children's anxiety, coping, internalising, and externalising behaviours. Using normative comparisons, four of the five BT children with pre-treatment internalising scores, and all five of the children with anxiety/depression scores within the clinical range were returned to within normal limits following treatment. In addition, all children were reported to be functioning within normal limits at follow-up intervals.

Findings from statistical analyses across treatment and follow-up were consistent with those extrapolated from individual results. Tentative analyses comparing treatment gains for trait-anxiety and coping, as reported by parents and children, found the majority of change occurred across treatment. Pre- to post-treatment ESs for parent and child reports of child coping and trait-anxiety were large ($ES = .72 - 2.31$). Effect sizes were comparable to those observed for the CBT protocol ($ES = 1.32 - 1.71$) and previous CBT studies (mean $ES = 1.30 - 1.80$, see Huzziff et al., 2004). Compared with BT pre- to post-treatment findings, smaller gains were observed for the BT protocol across follow-up ($ES = .22 - .38$). The one exception was parent perceptions of

children's trait-anxiety. Results found a significant increase in parent perceptions of child anxiety across follow-up.

Objective Three: Long Term effects of CBT and BT

The third research goal was to establish the long-term effects (3-, 6- and 12-months) of CBT and BT within a New Zealand sample. The related hypothesis, that change at post-treatment and follow-up would be comparable across treatment condition, was only partially supported. While a comparable number of children across treatment condition no longer met criteria for an anxiety disorder following treatment, treatment gains for BT participants did not appear to be as well maintained across follow-up as they were for CBT participants. For example, across follow-up, two BT participants again met diagnostic criteria for their primary anxiety disorder (SAD). Rose and Job met diagnostic criteria at 6- and 12-month follow-up respectively, although Rose was diagnosis free at 12-month follow-up. Findings for CBT participants were more stable across follow-up; all CBT participants continued to be diagnosis free.

Overall, as indicated in a previous section, post-treatment findings showed children who participated in the BT programme generally reported comparable treatment gains across treatment relative to those who completed the CBT programme. However, differences between the two groups increased across time with overall findings for BT participants indicating poorer long-term maintenance of treatment gains at 12-month follow-up compared with CBT participants. Differences between the two treatment conditions were seen diagnostically and on paper and pencil measures. Diagnostically, children in the CBT programme appeared to be more resistant to early relapse than children in the BT programme. With regard to paper and pencil findings, parent and child reports indicated more gains for CBT compared with BT across follow-up.

Tentative statistical analyses of participant gains across treatment condition were consistent with overall individual findings. The BT protocol effected larger treatment gains pre- to post-treatment compared with the CBT protocol, albeit non-significant. Over time, differences increased. Post-treatment to 12-month follow-up analyses found the CBT programme incurred better long-term gains than BT on some measures. While parents and children generally reported greater pre- to post-treatment treatment gains for children compared with reports for CBT children, assessments across follow-up found

that positive changes were better maintained or continued for children in the CBT condition. Overall, mindful of low power, results did not provide a lot of significant differences across the treatment conditions at post-treatment or 12-month follow-up. Additionally, it is not clear whether the better long-term differences observed for the CBT condition compared with the BT condition are a function of the number of treatment sessions or the inclusion of cognitive components. However, based on comparisons overall, a reasonable conclusion here was that BT was able to produce change efficiently. A question for future research is around both replication as well as increasing the durability of effects over time.

Objective Four: Secondary Effects of Treatment for Parents

An ancillary goal of the current study was to look at secondary effects of child-focused treatment on parent emotional functioning. Results supported the hypothesis that regardless of treatment condition, parents who reported elevated symptoms of anxiety or depression in themselves at pre-treatment would report a reduction in symptoms at post-treatment.

While parents generally reported anxiety and depressive symptoms within the normal range, some reported levels within a clinically concerning range. Of the parents who reported elevated symptoms of trait anxiety ($n = 2$, CBT; $n = 3$, BT) and/or depression ($n = 3$, CBT; $n = 2$, BT) at pre-treatment, all reported notable reductions following their child's treatment. While post-treatment scores on related measures fluctuated across follow-up, they generally remained lower than at pre-treatment. These findings are similar to previous treatment outcome findings. For example, Cobham et al.'s (1998) treatment outcome study of 67 children (aged 7 to 14 years) found parents with elevated symptoms of anxiety at pre-treatment reported reduced symptoms following the child's treatment.

Interpretation and Implications

The results from the current study add support to the increasing body of literature indicating the efficacy of manualised CBT for children with anxiety diagnoses (e.g., Barrett, Dadds et al., 1996; Kendall et al., 1997). Further support was found for the use of manualised CBT programmes within English speaking countries (Barrett, Dadds et

al., 1996; Kendall et al., 1997), and specifically in this study, New Zealand. In addition, the findings shed further light on the cognitive and behavioural components.

Findings were consistent with Kendall et al.'s (1997) speculation that the cognitive components of the CBT programme serve a preparatory role and are unlikely to effect meaningful change without *in-vivo* exposure. For example, this was evidenced within the current study when comparing a child who completed treatment with a child of similar characteristics who did not complete treatment. CBT participants, Hope and Joy, no longer met diagnostic criteria for an anxiety disorder following the first eight, cognitively based sessions of treatment. While the cognitive component of treatment effected marked change for both of these children (and smaller change for others), alone it did not appear to be sufficient for long-term maintenance of treatment gains. Hope, who withdrew from treatment following the first eight sessions, was found to have a notable decline in treatment gains across follow-up (as assessed by parent and child paper and pencil reports). All areas of functioning (anxiety, depression, negative affect, and coping) relapsed with scores returning to pre-treatment levels or higher at 12-month follow-up. While her continued status of no disorder following intervention was encouraging, a return to pre-treatment coping levels was not. For Joy, who did continue with the second half of treatment, multi-method assessment reports at post-treatment and across follow-up indicated immediate and continuing treatment gains. It may be that while Hope learnt cognitive-based skills in the first half of therapy, withdrawal from treatment precluded the experience of directly applying and consolidating these new skills (i.e., exposure based activities). Of course, other factors might account for differences here (e.g., total number of treatment sessions attended, individual and family differences). Nevertheless, the findings support the speculation.

Further support for the supposition that the cognitive components of the CBT programme are unlikely to effect meaningful change without *in-vivo* exposure was apparent in additional parent and child reports. Findings across assessment points provided fairly strong support for the respective effects of cognitive- and behavioural-based components. Results found that while the cognitive-based half of treatment effected some positive treatment gains, statistically and most clinically significant gains were not seen until after the behavioural-based half of treatment had been completed.

In CBT participants, parent and child reporting of when change occurred also provided information about factors that may have effected the most impact on treatment gains. The current findings conflict with the literature proposing that the majority of effect occurs in brief therapies in the first six to eight treatment sessions (Koss & Shiang, 1994). An explanation for this may be that the behaviourally based techniques resulted in both more change and more rapid change than the cognitively-based techniques. This explanation is consistent with reports that behavioural techniques may effect more rapid change than other brief techniques (Koss & Shiang, 1994). It may be that best practise when using CBT for anxious children is to incorporate both the cognitive and the behavioural focused components simultaneously. Doing so would be expected to effect similar outcomes within a reduced time period. A recent single-case study with four anxiety disordered youth investigated the simultaneous use of the different components for children and has found this to be the case (Girling-Butcher & Ronan, 2004). However, it is noted that the 8-10 session protocol used in that study also incorporated increased parental involvement (i.e., in sessions and in exposure). Thus, the more specific question remains and represents a useful future direction for research.

Results for CBT participants also indicated added benefits of this treatment modality for comorbid, non-anxiety symptoms (e.g., depression and externalising problems) similar to those reported in previous studies (Kendall, 1994; Kendall et al., 1997). Kendall et al. (1997) offer two possible explanations for this finding. First, it may be that children generalise coping skills to a wide range of problems. Second, the overlap between anxiety and depression (i.e., negative affectivity) may relate to an incidental treatment of depressive symptoms. Either way, the findings suggest that CBT interventions have promise for some comorbid problems.

The BT results also extend previous research in several ways. First, the present study's use of behavioural components alone increase existing knowledge regarding their role in the treatment of anxious children. Results for BT participants' targeted symptoms across treatment were similar to those for CBT participants. The BT results indicate that the behavioural components of the CBT programme need not be preceded by the cognitive components to produce positive changes in children's ability to manage anxious situations.

These findings have important implications for treatment. In particular, results indicated that the cognitively based techniques used in CBT programmes might be unnecessary in the treatment of anxious youth. Findings for the BT participants found treatment was briefer than most CBT interventions while effecting similar treatment outcomes on targeted functioning. The use of a decreased number of sessions within clinical settings would have multiple positive outcomes for families (e.g., financial cost) and organisations (e.g., time and resources). Given that the majority of referred children attend less than 10 treatment sessions prior to termination or dropout (Weisz et al., 1997; Weisz & Weiss, 1989) the potential for briefer treatment may mean that more children complete treatment.

Second, the BT results provide support for the behavioural techniques alone to effect meaningful change for both targeted (anxiety related) and non-targeted (i.e., depression and negative self-talk) areas of anxious children's functioning. However, the combined use of cognitive and behavioural techniques used in the CBT programme appeared to result in more durable gains generally. It may be that while behavioural components alone are sufficient to alter anxiety and related functioning for most children in the short term, they may not be sufficient for some children in the longer term. Future research in this area would be useful. One unanswered question here relates to the length of treatment as a variable implicated in longer-term maintenance. That is, whether eight additional sessions of BT would result in more durable gains is unknown.

Third, BT results partially support the proposition that cognitive change may be unrelated to the cognitive components of treatment (Kazdin & Weisz, 1998). Children in both treatment conditions reported decreases in negative thinking indicating positive cognitive change can occur regardless of whether cognitive components are used or not. However, the maintenance of these treatment gains was slightly better for children in the CBT condition than for children in the BT condition. Results then showed that while behavioural techniques alone may effect cognitive change, they may not be sufficient for their maintenance. While cognitive treatment components may first appear to be unrelated to cognitive change, they may play an important maintenance role.

An ancillary investigation of secondary treatment gains for parents of the children from the CBT and BT conditions indicated that they too experienced positive treatment gains. One explanation for improved parent functioning may be that parents experienced reduced stress or pressure regarding their need to ‘fix’ their child’s anxiety related problems as a result of the child engaging in treatment. Parent responses on open-ended RCQ questions following treatment support this hypothesis; most parents stated that their child’s participation in treatment reduced pressure on them as parents to ‘fix’ their child’s problem. Concurrently, increased parent management strategies (i.e., contingency reinforcement skills) learnt during the parent session of treatment may have increased parents’ sense of control over situations they previously felt to be unmanageable. Altering parents emotional functioning would also be expected to alter the child’s experience of anxiety (Kendall, Chansky et al., 1992).

A second explanation for reduced symptoms of anxiety and depression for parents may be that by having parents observe their child’s new coping skills they learnt new ways to manage their own feelings and behaviour. While parent response style may encourage and maintain anxious responding in children (see *Operant Conditioning*, Chapter 3 and *Modelling*, Chapter 5), it may also be that children’s response style, within a managed therapeutic setting, has the power to affect parent response style. Either way, responding would be expected to create a positive feedback loop for children and parents that would reinforce approach rather than avoidance behaviours in the future. Future research in this area may be useful. Increased knowledge regarding the potential effects of child, or therapeutic modelling on parent/caregiver responding may have important implications for the maintenance of treatment gains and management of parent anxiety.

Limitations of the Present Study

There were several disadvantages in the use of the multiple-baseline design in the current study. First, the baseline phase of three to eight weeks was not sufficient to establish if improvements noted across this period were a reactive, initial response to pre-treatment assessment/monitoring or a natural regression towards the mean. Notably, parent and child ongoing reports of child trait anxiety symptoms and ability to cope with individualised anxiety provoking situations showed some improvement

across this phase. However, reporting generally stabilised after a couple of weeks of monitoring indicating that initial responding to be most probably reactive. A difficulty when using a baseline design is weighing up client needs against researcher needs. While it is common practise to use the baseline periods used in the current research, treatment design could be improved in future research by increasing the minimum number of weeks used within baseline periods.

Second, the use of a multiple baseline design does not easily allow results to be generalised to other cases. Differences across individuals may account in some way for differences in treatment outcome. While the positive results established for multiple participants' seems to rule out the possibility of findings being the result of individuals' idiosyncratic characteristics, the same could not be said for individual differences across treatment.

Findings showed that there were differences in participant characteristics across treatment condition even though they were statistically no greater than chance. Children in the CBT and BT programme were similar for many characteristics (e.g., diagnoses, living arrangements, and level of parental education), but differed on many others. Given the low participant numbers and possibility of Type-2 error, these differences are worth noting. First, children in the CBT condition were slightly older than the children in the BT condition. Second, the CBT condition consisted of an even gender mix, while those in the BT condition were predominantly male. Third, the CBT condition consisted of fewer Maori or Maori/European children than the BT condition. Fourth, all CBT children's parents were employed whereas two of the BT parents were unemployed whilst undertaking further education. Previous studies investigating the efficacy of the 'Coping Cat' CBT programme have found no notable differences in treatment outcome across age, gender, ethnicity and SES (e.g., Kendall, 1994; Kendall et al., 1997; Treadwell et al., 1995). Past findings then indicate that these factors are unlikely to have impacted on the current outcome findings for CBT. However, a lack of research specifically targeting these factors, as they relate to behavioural treatment for anxious children, means the same could not be said for BT findings. The potential effects of age, gender, ethnicity and SES on treatment outcome for the BT children, and consequently treatment outcome across treatment condition, can not be ruled out.

Another limitation was the current study's exclusion of a behavioural observation measure. It would have been useful to have information from an independent observer across the assessment phases. Direct observations could have produced more confidence in the different results in parent reporting across treatment condition. Parents of CBT children perceived that large positive change occurred in children's trait-anxiety across treatment and small, continued improvement across follow-up. Parents of children in the BT condition perceived large positive changes in children's trait-anxiety across treatment and a reduction in these gains across follow-up.

The current study's measurement of anxiety did not enable the researcher to establish if differences across treatment condition were a product of differences in children's ability to express anxiety following treatment or treatment *per se*. Anxiety symptoms are often internal and subjective in nature (Kendall, Chansky et al., 1992; Ronan, 1996) thus potentially obscuring the accuracy of parent observations of their children's anxious traits. Strategies taught during CBT may have altered this factor. CBT participants learnt to verbalise feelings and thoughts associated with anxiety with the use of the FEAR acronym learnt during sessions. The verbal expression of anxiety of this forum was not a focus for BT participants and they may not have developed the associated communication skills. An explanation for BT parent reported improved functioning across treatment and regression across follow-up was that they may have received information during the treatment phase¹⁴ that increased insight into their children's internal response style. Following treatment, this information may not have been so readily available. BT parents may have had to rely more on external observations than CBT parents did. Thus, post-treatment differences may reflect parent perceptions rather than 'true' differences in treatment outcome. The concurrent use of parent reporting and direct observations by an independent assessor(s) would increase confidence regarding the effectiveness of treatment outcomes across the two treatment conditions.

It is also unclear whether the use of teachers as a source of information regarding children's internal states is useful for treatment outcome focused research. As with previous studies where information about children's internal states has been sought from teachers, data where available did not generally indicate concerns regarding

¹⁴ The therapist spoke with parents at the start and or end of each therapy session. During this time, homework tasks were discussed and parent concerns or queries clarified.

internalising behaviour problems prior to treatment (Howard & Kendall, 1996; Kendall et al., 1997). While parent and to a lesser extent, child reports of children's pre-treatment anxiety levels refute teacher reports, future research needs to include behavioural observations conducted by observers blind to treatment condition to assess observable reductions in anxious behaviours in classroom settings. Again, the use of direct observations within the current study would have provided increased confidence regarding the effectiveness of treatment outcomes.

A potential issue within the current research was the different number of therapeutic sessions used across treatment condition. At post-treatment, the present study's eight-session BT programme generally showed similar success to the 16-session CBT programme, indicating that the number of treatment sessions did not disadvantage the BT children at post-treatment. Given that BT components may impact change more quickly than other brief treatment techniques, combined with reports that most treatment impact occurs within the first 8- to 10-sessions of treatment (Koss & Shiang, 1994), this finding is not surprising.

However, while results across treatment condition were generally similar, differences were evident at follow-up, particularly in parent reported functioning. Results here favoured CBT. The current research was unable to rule out the possibility that a higher number of contact hours may have served to better reinforce newly acquired coping skills. Neither was it able to be established whether differences were the result of cognitive components used within CBT. It is recommended that further comparative research, using treatment programmes of comparable length, be conducted to eliminate the possible confounding effects of the number of treatment sessions.

A further potential concern for treatment outcome may have been the use of 'booster' sessions. One to two booster sessions were required for children in both treatment conditions (CBT: $n = 2$ participants; BT: $n = 1$ participant). Nevertheless, booster sessions are a necessary feature of sound treatment (Kendall et al., 1999). Due to the limited number of participants, what could not be established from the current study, was why these particular children needed booster sessions and others did not. The literature may benefit from further research to establish predictive risk factors for children needing booster sessions. This would be particularly useful for clients, and

therapists in mental health practices. Increased knowledge in this area may highlight the need for longer-term follow-up (i.e., follow-up sessions or phone calls) with clients while also providing greater insight into why certain clients do not manage to maintain treatment gains. In establishing what these reasons may be, treatment could better target these factors. The participants who required booster sessions here had additional complicating factors that were not established until after treatment had commenced: sexual abuse (Eve), a terminally ill mother (Matt), and strong, negative parent perception of child coping (Cory). It may have been that these factors reduced children's ability to learn and use their new coping strategies compared with other children without such complicating factors. Children who received booster sessions continued to show improvement across follow-up, with all three no longer meeting diagnostic criteria for any anxiety at 12-month follow-up. Improved functioning, as indicated on paper and pencil measures, also showed improvements across follow-up. As with other child and parent reporting, improvements were gradual with some fluctuations across time.

Finally, the current study's use of statistical testing within and between treatment condition was limited. Results indicated no significant differences for reported scores on measures at pre-treatment. However such analyses, due to issues of power, were tentative at best. A main purpose of the analyses was to investigate the relative *effect* of treatment across time and treatment. Within this context, the use such procedures were seen to supplement individual results.

Recommendations for Future Research

Post-treatment findings indicated that an 8-session BT programme was comparable to a 16-session CBT programme in producing benefits for anxiety disordered youth and their parents. Results for the BT study need to be replicated and comparative effects studied further. It is not clear whether the few differences noted across treatment condition, and the differences seen across follow-up, were the result of cognitive components, client characteristics (e.g., gender, secondary symptoms), or the number of treatment sessions.

The current study was unable to determine which treatment components were active in bringing about long-term change. Treatment components in the present BT intervention

included relaxation, modelling, exposure, and contingency management. The CBT programme included the BT techniques plus cognitive restructuring and problem solving. Further investigation is needed to establish (a) if meaningful differences do in fact exist between the two programmes, and if so, what treatment components may account for differences; and (b) which treatment components are critical for treatment maintenance.

The current research indicated that durability of gains for anxious children who receive BT is an area needing further focus. The current study found that BT may not be as effective for anxious children with secondary depressive symptoms and elevated levels of negative self-talk (Rose and Bob). While recent research (Berman, Weems, Silverman, & Kurtines, 2000; Kendall et al., 1997; Treadwell et al., 1995) has indicated that such factors do not adversely effect treatment outcome, most research in this area has focused on CBT interventions. The current results suggest that such factors may adversely affect BT outcomes. Further research is needed to examine the potential effects of secondary symptoms for anxious children treated with BT. Establishing how clients' secondary symptoms impact on treatment will be important in assisting clinicians to make 'best choices' regarding client needs.

The current study found that while BT may effect rapid, large positive change on targeted functioning, treatment programmes that incorporate both cognitive and behavioural techniques may be more effective for targeted and non-targeted functioning, particularly in the long-term. It may be advantageous for future research to investigate the optimum way of combining cognitive and behavioural components. Recently, research has looked at briefer CBT interventions that target cognitive-components along side exposure-based techniques; such intervention programmes have been found to be effective both immediately and across follow-up (e.g., Girling-Butcher & Ronan, 2004). Establishing briefer and more succinct intervention packages may increase treatment benefits (e.g., financial and resource costs and attrition rates). Such treatment packages will be of particular use if it can be established that cognitive techniques predict better treatment outcomes for children with secondary symptoms such as depression (cf. behavioural techniques alone).

Further research is also needed to establish what treatment components effect parent responding - both towards their own symptoms of anxiety and depression and their child's symptoms. The current study provided support for secondary effects of both CBT and BT interventions on parent symptoms of anxiety and depression, with retrospective reports suggesting several reasons for treatment gains. Future research is needed to better establish reasons for treatment gains. Doing so may lead to a more comprehensive understanding of the role treatment plays in parent functioning. In turn, this would have implications for how treatment is provided.

To better establish the validity of the current BT intervention package, further studies are needed to replicate the findings. As previously noted, a limitation of the current study was generalisability of findings to other groups. It is recommended that future studies use larger participant numbers. To increase the generalisability of findings within a New Zealand setting, it will be important that participant numbers reflect New Zealand's ethnic make-up.

Previous research supports the notion that differential effects within a country's ethnic minorities are unlikely (Berman et al., 2000; Kendall et al., 1997; Treadwell et al., 1995). Despite this, future research needs to address the issue of whether interventions such as those used in the present study are suitable for New Zealand's indigenous people (Maori) and other ethnic minorities within New Zealand. It is important that researchers do not assume that treatment effects for all ethnic minorities within Western societies are the same.

Within a New Zealand context, it may be particularly important to ask those of Maori and Polynesian decent how treatment could be improved within a cultural sense. Given that direct cultural questions were not asked, and that the researcher was of European decent, parents may not have felt it appropriate or may have felt unable to comment on such factors. Areas for future consideration include whether parents from cultural minorities perceive clinic-based treatment as appropriate and whether assessment and treatment incorporate culturally sensitive protocol. Given the large emphasis on family within many Maori and Polynesian homes, it would be interesting to know whether their experience of child-focused therapy would be as positive. Anecdotal reports in the current study indicated that Maori children and their parents were just as satisfied with

the treatment protocol used in the current interventions as non-Maori. However, while the current study investigated parent satisfaction with treatment, it did not ask parents directly about additional areas that could benefit treatment.

Conclusion

In conclusion, anxiety disorders in childhood appear to be chronic in nature and without intervention may result in increased impairment across a range of functioning. Anxiety disorders are frequently comorbid both with other anxiety disorders and other disorders in general. Cognitive-behavioural theory provides a comprehensive understanding of anxiety problems. The current study sought to establish the usefulness of a manualised CBT programme within a New Zealand sample of anxious children and expand on the current body of research regarding CBT component effects on treatment outcome.

Results replicated previous findings for Kendall and colleagues' CBT programme within a New Zealand sample, supporting its use with anxious New Zealand children. Results extended previous research, increasing existing knowledge regarding the role of cognitively and behaviourally based treatment components on treatment outcome for child and parent functioning. A wide range of assessment measures targeting response channels, across multiple sources and multiple settings were found to be important for a comprehensive understanding of the child's functioning.

The use of manuals was beneficial to ensuring intervention procedures were adhered to, increasing the validity and integrity of the current findings. Results indicated that both the CBT and the BT programmes were effective in reducing children's maladaptive anxiety. Both interventions effected improvements across multiple areas of child functioning - cognitions, affect, and behaviour related to coping with anxiety provoking situations. The finding that both were effective in treating anxious children provides support for the use of either of these treatment packages. Positive findings for the behavioural intervention fits with the current research proposal that CBT interventions for children may not require the inclusion of formal cognitive components to effect meaningful clinical change; the behavioural components alone may be sufficient for some children. Further support is needed before such a conclusion could be considered convincing.

Behavioural treatment results, in conjunction with CBT results, provided meaningful information regarding the role of cognitive and behavioural treatment components. Results did not support their use alone. While the cognitively based half of treatment effected change, results found the active, exposure techniques used in the second half of treatment were a necessary ingredient for meaningful treatment outcome.

The BT results showed improvement across the same areas of functioning as the CBT results. Further, a notable strength of the BT intervention was its effectiveness in changing dysfunctional behaviour in a relatively short time period. When results from CBT and BT participants were compared, BT appeared to be slightly less effective across follow-up. Findings indicated that, at least for some children, cognitive components, or more sessions, might be necessary for long-term maintenance of treatment gains.

Results have important implications for practice, particularly given the current pressure for clinicians to use brief, empirically supported treatment (Kazdin & Weisz, 1998). Treatment outcome differences highlighted the need for clinicians to be sensitive to each client's presentation when choosing a treatment modality. The current findings may enhance clinician flexibility in terms of specific therapeutic procedures they may choose to use when working with anxious children. Results provide clinicians with information that may better allow the provision of brief, empirically supported treatment with increased flexibility in the specific therapeutic procedures chosen. Increased flexibility is particularly salient given the current climate of managed care, where clinicians are under increased pressure to use empirically supported treatment within health organisations (e.g., government-funded organisations) and measure client change. Further, the potential for more succinct, effective treatment is essential when one considers that the majority of referred children attend less than 10 treatment sessions prior to termination or dropout (Weisz et al., 1997; Weisz & Weiss, 1989).

Many critical issues regarding the treatment of childhood anxiety disorders remain unresolved. For example, the identification of the components necessary for cognitive change, best long-term maintenance of treatment gains, and the role of parent responding as a function of treatment are areas in need of further research. In addition,

the possible differential effects across interventions in relation to demographic variables such as age, gender, SES, and ethnicity need further examination as they relate to BT. Replication and extension of the current findings using larger sample sizes would go some way towards targeting these issues.

REFERENCES

- AACAP. (1997). Practice parameters for the assessment and treatment of children and adolescents with anxiety disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36, 69-84.
- Achenbach, T. M. (1991a). "Comorbidity" in child and adolescent psychiatry: Categorical and quantitative perspectives. *Journal of Child and Adolescent Psychopharmacology*, 1, 271-278.
- Achenbach, T. M. (1991b). *Manual for the Child Behavior Checklist/4-18 and 1991 Profile*. Burlington, VT: University of Vermont Department of Psychiatry.
- Achenbach, T. M. (1991c). *Manual for the Teacher Report Form and 1991 Profile*. Burlington: Department of Psychiatry, University of Vermont.
- Achenbach, T. M., & Edelbrock, C. (1986). *Manual for the Teacher's Report Form and Teacher Version of the Child Behaviour Profile*. Burlington, VT: University of Vermont Department of Psychiatry.
- Albano, A., & Chorpita, B. F. (1995). Treatment of anxiety disorders of childhood. *The Psychiatric Clinics of North America*, 18, 767-784.
- Albano, A. M., Marten, P. A., Holt, C. S., Heimberg, R. G., et al. (1995). Cognitive-behavioral group treatment for social phobia in adolescents: A preliminary study. *Journal of Nervous & Mental Disease*, 183, US, <http://www>.
- Albano, A. M., & Silverman, W. K. (1996). *Anxiety Disorders Interview Schedule for DSM-IV: Child version - Clinical manual*. San Antonio: The Psychological Corporation.
- Alfano, C. A., Beidel, D. C., & Turner, S. M. (2002). Cognition in childhood anxiety: Conceptual, methodological, and developmental issues. *Clinical Psychology Review*, 22, 1209-1238.
- Allison, D. B., Gorman, B. S., & Primavera, L. H. (1993). Some of the most common questions asked of statistical consultants: Our favorite responses and recommended readings. *Genetic, Social and General Psychology Monographs*, 119, 155-185.
- American Psychiatric Association. (1952). *Diagnostic and Statistical Manual: Mental disorders*. Washington, DC: American Psychiatric Association.
- American Psychiatric Association. (1968). *Diagnostic and Statistical Manual of Mental Disorders* (2nd ed.). Washington, DC: American Psychiatric Association.
- American Psychiatric Association. (1980). *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.). Washington, DC: American Psychiatric Association.

- American Psychiatric Association. (1987). *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.-revised ed.). Washington, DC: American Psychiatric Association.
- American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.). Washington, DC: American Psychiatric Association.
-  American Psychological Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders - Fourth edition (Temporary Revision)*. Washington, DC: American Psychiatric Association.
- Anderson, J. C. (1994). Epidemiological issues. In T. H. Ollendick, N. J. King & W. Yule (Eds.), *International Handbook of Phobic and Anxiety Disorders in Children and Adolescents* (pp. 43-66). New York: Plenum.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood, NJ: Prentice-Hall.
- Barlow, D. H. (1988). *Anxiety and it's disorders: The nature and treatment of anxiety and panic*. New York: The Guilford Press.
- Barlow, D. H., & Hersen, M. (1984). *Single case experimental designs: Strategies for studying behavior change* (2nd ed.). New York: Pergamon Press Inc.
- Barrett, P. M., Dadds, M. R., & Rapee, R. M. (1991). *The coping koala: Treatment manual*. Unpublished manuscript, The University of Queensland, Australia.
- Barrett, P. M., Dadds, M. R., & Rapee, R. M. (1996). Family treatment of childhood anxiety: A controlled trial. *Journal of Consulting and Clinical Psychology*, *64*, 333-342.
- Barrett, P. M., Duffy, A. L., Dadds, M. R., & Rapee, R. M. (2001). Cognitive-behavioral treatment of anxiety disorders in children: Long-term (6-year) follow-up. *Journal of Consulting and Clinical Psychology*, *69*, 135-141.
- Barrett, P. M., Rapee, R. M., Dadds, M. M., & Ryan, S. M. (1996). Family enhancement of cognitive style in anxious and aggressive children. *Journal of Abnormal Child Psychology*, *24*, 187-203.
- Beck, T. A., Steer, R. A., & Brown, G. K. (1996). *Beck Depression Inventory - Second edition: Manual*. San Antonio, Tx: The Psychological corporation.
- Beidel, D. C., Turner, S. M., & Morris, T. L. (2000). Behavioral treatment of childhood social phobia. *Journal of Consulting and Clinical Psychology*, *68*, 1072-1080.
- Berman, S. L., Weems, C. F., Silverman, W. K., & Kurtines, W. M. (2000). Predictors of outcome in exposure-based cognitive and behavioural treatments for phobic and anxiety disorders in children. *Behavior Therapy*, *31*, 713-231.

- Bernstein, G. A., Borchardt, C. M., & Perwien, A. R. (1996). Anxiety disorders in children and adolescents: A review of the past 10 years. *Journal of the American Academy of Child and Adolescent Psychiatry*, *35*, 1110-1119.
- Bernstein, G. A., & Borchardt, M. D. (1991). Anxiety disorders of childhood and adolescence: A critical review. *Journal of the American Academy of Child and Adolescent Psychiatry*, *30*, 519-532.
- Brady, E. U., & Kendall, P. C. (1992). Comorbidity of anxiety and depression in children and adolescents. *Psychological Bulletin*, *111*, 244-255.
- Brown, T. A., Chorpita, B. F., & Barlow, D. H. (1998). Structural relationships among dimensions of the DSM-IV anxiety and mood disorders and dimensions of negative affect, positive affect, and autonomic arousal. *Journal of Abnormal Psychology*, *107*, 179-192.
- Brown, T. A., di Nardo, P. A., Lehman, C. L., & Campbell, L. A. (2001). Reliability of DSM-IV anxiety and mood disorders: Implications for the classification of emotional disorders. *Journal of Abnormal Psychology*, *110*, 49-58.
- Butler, G., Fennell, M., Robson, P., & Gelder, M. (1991). Comparison of Behavior Therapy and Cognitive Behavior Therapy in the treatment of Generalized Anxiety Disorder. *Journal of Consulting and Clinical Psychology*, *59*, 167-175.
- Carey, M. P., Faulstich, M. E., & Carey, T. C. (1994). Assessment of anxiety in adolescents: Concurrent and factorial validities of the Trait Anxiety scale of Spielberger's State-Trait Anxiety Inventory for Children. *Psychological Reports*, *75*, 331-338.
- Carson, R. C. (1991). Dilemmas in the pathway of the DSM-IV. *Journal of Abnormal Psychology*, *100*, 302-307.
- Casey, R. J., & Berman, J. S. (1985). The outcome of psychotherapy with children. *Psychological Bulletin*, *98*, 388-400.
- Castaneda, A., McCandless, B. R., & Palermo, D. S. (1956). The Children's form of the Manifest Anxiety Scale. *Child Development*, *27*, 317-326.
- Chambless, D. L., & Gillis, M. M. (1993). Cognitive therapy of anxiety disorders. *Journal of Consulting and Clinical Psychology*, *61*, 248-260.
- Chambless, D. L., & Hollon, S. D. (1998). Defining empirically supported therapies. *Journal of Consulting & Clinical Psychology*, *66*, 7-18.
- Chambless, D. L., & Ollendick, T. H. (2001). Empirically supported psychological interventions: Controversies and evidence. *Annual Review of Psychology*, *52*, 685-716.
- Chaplin, J. P. (1985). *Dictionary of psychology* (2nd revised edition ed.). New York: Dell Publishing.

- Chorpita, B. F., Albano, A. M., & Barlow, D. H. (1998). The structure of negative emotions in a clinical sample of children and adolescents. *Journal of Abnormal Psychology, 107*, 74-85.
- Chorpita, B. F., Barlow, D. H., Albano, A. M., & Daleiden, E. L. (1998). Methodological strategies in child clinical trials: Advancing the efficacy and effectiveness of psychosocial treatments. *Journal of Abnormal Child Psychology, 26*, 7-16.
- Chorpita, B. F., Plummer, C. M., & Moffitt, C. E. (2000). Relations of tripartite dimensions of emotion to childhood anxiety and mood disorders. *Journal of Abnormal Child Psychology, 28*, 299-310.
- Clark, D. A. (2001). The persistent problem of negative cognitions in anxiety and depression: New perspectives and old controversies. *Behavior Therapy, 32*, 3-12.
- Clark, D. A., Steer, R. A., & Beck, A. T. (1994). Common and specific dimensions of self-reported anxiety and depression: Implications for the cognitive and tripartite models. *Journal of Abnormal Psychology, 103*, 645-654.
- Clark, D. M. (1999). Anxiety disorders: Why they persist and how to treat them. *Behaviour Research and Therapy, 37*, 5-27.
- Clark, L. A., & Watson, D. (1991). Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications. *Journal of Abnormal Psychology, 100*, 316-336.
- Cloninger, C. R. (1986). A unified biosocial theory of personality and its role in the development of anxiety states. *Psychiatric Development, 3*, 167-226.
- Cobham, V. E., Dadds, M. R., & Spence, S. H. (1998). The role of parental anxiety in the treatment of childhood anxiety. *Journal of Consulting and Clinical Psychology, 66*, 893-905.
- Coddington, R. D. (1972). The significance of life events as etiological factors in the diseases of children – II: A study of a normal population. *Journal of Psychosomatic Research, 16*, 205-213.
- Cohen, J. (1988). *Statistical power analysis for the behavioural sciences*. Hillsdale, NJ: Erlbaum.
- Cole, D. A., Peeke, L. G., Martin, J. M., Truglio, R., & Seroczynski, A. D. (1998). A longitudinal look at the relation between depression and anxiety in children and adolescents. *Journal of Consulting and Clinical Psychology, 66*, 451-460.
- Cole, D. A., Truglio, R., & Peeke, L. (1997). Relation between symptoms of anxiety and depression in children: A multitrait--Multimethod--multigroup assessment. *Journal of Consulting and Clinical Psychology, 65*, 110-119.

- Costello, A. J., Edelbrock, C., Kalas, R., Kulcan, M. K., & Klaric, S. H. (1984). *Development and testing of the NIMH Diagnostic Interview Schedule for Children (DISC) in a clinic population: Final report*. Rockerville, MD: Centre for Epidemiological Studies, NIMH.
- Cross, R. W., & Huberty, T. J. (1993). Factor analysis of the State-Trait Anxiety Inventory for children with a sample of seventh- and eighth-grade students. *Journal of Psychoeducational Assessment*, *Vol 11(3), Sep 1993, 232-241.*, *11*, 232-241.
- Dadds, M. R., Barrett, P. M., & Cobham, V. E. (1998). Anxiety disorders. In A. S. Bellack & M. Hersen (Eds.), *Comprehensive clinical psychology* (Vol. 5, pp. 317-341). Oxford, England: Pergamon/Elsevier Science Ltd.
- Dadds, M. R., Barrett, P. M., Rapee, R. M., & Ryan, S. (1996). Family process and child anxiety and aggression: An observational analysis. *Journal of Abnormal Child Psychology*, *24*, 715-734.
- Dadds, M. R., Davey, G. C., & Field, A. P. (2001). Developmental aspects of conditioning processes in anxiety disorders. In M. W. Vasey & M. R. Dadds (Eds.), *The developmental psychopathology of anxiety*. Oxford: Oxford University Press.
- Dadds, M. R., Rapee, R. M., & Barrett, P. M. (1994). Behavioral observation. In T. H. Ollendick, N. J. King & W. Yule (Eds.), *International handbook of phobic and anxiety disorders in children and adolescents* (pp. 349-364). New York: Plenum Press.
- Dadds, M. R., Spence, S. H., Holland, D. E., Barrett, P. M., & Laurens, K. R. (1997). Prevention and early intervention for anxiety disorders: A controlled trial. *Journal of Consulting and Clinical Psychology*, *65*, 627-635.
- Daleiden, E. L., & Vasey, M. W. (1997). An information-processing perspective on childhood anxiety. *Clinical Psychology Review*, *17*, 407-429.
- Dobson, K. S., & Shaw, B. F. (1988). The use of treatment manuals in cognitive therapy: Experience and issues. *Journal of Consulting and Clinical Psychology*, *56*, 673-680.
- Dorr, D. (1981). Factor structure of the State-Trait Anxiety Inventory for Children. *Personal and Individual Differences*, *2*, 113-117.
- Durlak, J. A., Fuhrman, T., & Lampman, C. (1991). Effectiveness of cognitive-behavior therapy for maladaptive children: A meta-analysis. *Psychological Bulletin*, *110*, 204-214.
- Everly, G. S., & Lating, J. M. (Eds.). (1995). *Psychotraumatology: Key papers and core concepts in post-traumatic stress*. New York: Plenum Press.

- Eysenck, H. J. (1967). *Biological bases of personality*. Springfield, IL: Charles C Thomas.
- Fergusson, D. M., & Horwood, L. J. (1993). The structure, stability and correlations of the trait components of conduct disorder, attention deficit and anxiety/withdrawal reports. *Journal of Child Psychology*, *34*, 749-766.
- Fergusson, D. M., Horwood, L. J., & Lynskey, M. T. (1993). Prevalence and comorbidity of DSM-III-R Diagnoses in a birth cohort of 15 year olds. *Journal of the American Academy of Child and Adolescent Psychiatry*, *32*, 1127-1134.
- Feske, U., & Chambless, D. L. (1995). Cognitive behavioral versus exposure only treatment for social phobia: A meta-analysis. *Behavior Therapy*, *26*, 695-720.
- Field, A. P., Argyris, N. G., & Knowles, K. A. (2001). Who's afraid of the big bad wolf: A prospective paradigm to test Rachman's indirect pathways in children. *Behaviour Research and Therapy*, *39*, 1259-1276.
- Flannery-Schroeder, E. C., & Kendall, P. C. (2000). Group and individual cognitive-behavioral treatments for youth with anxiety disorders: A randomized clinical trial. *Cognitive Therapy and Research*, *24*, 251-278.
- Fonseca, A. C., Yule, W., & Erol, N. (1994). Cross-cultural issues. In T. H. Ollendick, N. J. King & W. Yule (Eds.), *International handbook of phobic and anxiety disorders in children and adolescents* (pp. 67-84). New York: Plenum Press.
- Frick, P. J., O'Brien, B. S., Wootton, J. M., & McBurnett, K. (1994). Psychopathy and conduct problems in children. *Journal of Abnormal Psychology*, *103*, 700-7007.
- Girling-Butcher, R. D. (2000). *Brief Cognitive-Behavioural Therapy for Children with Anxiety Disorders*. Unpublished Master of Arts, Massey University, Palmerston North: New Zealand.
- Girling-Butcher, R. D., & Ronan, K. R. (2004). Brief CBT for anxiety in youth: A multiple baseline evaluation. *Manuscript in preparation*.
- Goldfried, M. R., & Wolfe, B. E. (1998). Toward a more clinically valid approach to therapy research. *Journal of Consulting and Clinical Psychology*, *66*, 143-150.
- Graziano, A. M., & Mooney, K. C. (1980). Family self-control instruction for children's nighttime fear reduction. *Journal of Consulting and Clinical Psychology*, *48*, 206-213.
- Graziano, A. M., & Mooney, K. C. (1982). Behavioral treatment of "nightfears" in children: Maintenance of improvement at 2-1/2 to 3-year follow-up. *Journal of Consulting and Clinical Psychology*, *50*, 598-599.
- Grey, J. A. (1982). *The neuropsychology of anxiety: An enquiry into the functions of the septo-hippocampal system*. Oxford, England: Oxford University Press.

- Gullone, E., & King, N. J. (1997). Three-year follow-up of normal fear in children and adolescents aged 7 to 18 years. *British Journal of Developmental Psychology*, *15*, 97-111.
- Hadwin, J., Frost, S., French, C. C., & Richards, A. (1997). Cognitive processing and trait anxiety in typically developing children: Evidence for an interpretation bias. *Journal of Abnormal Psychology*, *106*, 486-490.
- Hayward, C., Varady, S., Albano, A. M., Thienemann, M., Henderson, L., & Schatzberg, A. F. (2000). Cognitive-behavioral group therapy for social phobia in female adolescents: Results of a pilot study. *Journal of the American Academy of Child & Adolescent Psychiatry*, *39*, 721-726.
- Hedl, J. J., & Papay, J. P. (1982). The factor structure of the State-Trait Anxiety Inventory for Children: Kindergarten through the fourth grades. *Personal and Individual Differences*, *3*, 439-446.
- Herbert, M. (1994). Etiological Considerations. In T. H. Ollendick, N. J. King & W. Yule (Eds.), *International handbook of phobic and anxiety disorders in children and adolescents* (pp. 3-20). New York: Plenum Press.
- Hodges, K. (1990). Depression and anxiety in children: A comparison of self-report questionnaires to clinical interview. *Psychological Assessment*, *2*, 376-381.
- Hodges, K., Kline, J., Stern, L., Cytryn, L., & McKnew, D. (1982). The development of a child assessment interview for research and clinical use. *Journal of Abnormal Child Psychology*, *10*, 173-189.
- Hoehn-Saric, E., Maisami, M., & Wiegand, D. (1987). Measurement of anxiety in children and adolescents using semistructured interviews. *American Academy of Child and Adolescent Psychiatry*, *26*, 541-545.
- Hollon, S. D., & Beck, A. T. (1994). Cognitive and cognitive behavioral therapies. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of Psychotherapy and Behavior Change* (4th ed., pp. 428-466). New York: John Wiley & Sons, Inc.
- Howard, B. L., & Kendall, P. C. (1996). Cognitive-behavioral family therapy for anxiety-disordered children: A multiple-baseline evaluation. *Cognitive Therapy and Research*, *20*, 423-443.
- Husain, S. A., & Kashani, J. H. (1992). *Anxiety disorders in children and adolescents* (Vol. 22). Washington, DC: American Psychiatric Press, Inc.
- Huzziff, C. A., Ronan, K. R., & Kazantzis, N. (2004). Efficacy of cognitive-behavioural treatments for youth with anxiety disorders: A power and meta-analytic review. *Manuscript in preparation*.
- Joiner, T. E. (1996). A confirmatory factor-analytic investigation of the tripartite model of depression and anxiety in college students. *Cognitive Therapy and Research*, *20*, 521-539.

- Joiner, T. E., Catanzaro, S. J., & Laurent, J. (1996). Tripartite structure of positive and negative affect, depression, and anxiety in child and adolescent psychiatric inpatients. *Journal of Abnormal Psychology, 105*, 401-409.
- Jones, H. E. (1931). The conditioning of overt emotional responses. *Journal of Emotional Psychology, 22*, 127-130.
- Jones, M. C. (1924). A laboratory study of fear: The case of Peter. *Pedagogical Seminary, 31*, 308-315.
- Kane, M. T., & Kendall, P. C. (1989). Anxiety disorders in children: A multiple-baseline evaluation of a Cognitive-Behavioral treatment. *Behavior Therapy, 20*, 499-508.
- Kaplan, H. I., Sadock, B. J., & Grebb, J. A. (1994). *Kaplan and Sadock's Synopsis of Psychiatry: Behavioural sciences clinical psychiatry* (7th ed.). Baltimore, Maryland: Williams and Wilkins.
- Kazdin, A. E. (1994). Psychotherapy for children and adolescents. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of Psychotherapy and Behavior Change* (4th ed., pp. 543-594). New York: John Wiley & Sons, Inc.
- Kazdin, A. E. (1998). *Research design in clinical psychology* (3rd ed.). Needham Heights, MA: Allyn and Bacon.
- Kazdin, A. E., Bass, D., Ayers, W. A., & Rodgers, A. (1990). Empirical and clinical focus of child and adolescent psychotherapy research. *Journal of Consulting and Clinical Psychology, 58*, 729-740.
- Kazdin, A. E., & Weisz, J. R. (1998). Identifying and developing empirically supported child and adolescent treatments. *Journal of Consulting and Clinical Psychology, 66*, 19-36.
- Kendall, P. C. (1993). Cognitive-behavioral therapies with youth: Guiding theory, current status, and emerging developments. *Journal of Consulting and Clinical Psychology, 61*, 235-247.
- Kendall, P. C. (1994). Treating anxiety disorders in children: Results of a randomized clinical trial. *Journal of Consulting and Clinical Psychology, 62*, 100-110.
- Kendall, P. C., & Braswell, L. (1982). Cognitive-behavioral self-control therapy for children: A components analysis. *Journal of Consulting and Clinical Psychology, 50*, 672-689.
- Kendall, P. C., Cantwell, D. P., & Kazdin, A. E. (1989). Depression in children and adolescents: Assessment issues and recommendations. *Cognitive Therapy and Research, 13*, 109-146.

- Kendall, P. C., & Chansky, T. E. (1991). Considering cognition in anxiety-disordered children. *Journal of Anxiety Disorders*, 5, 167-185.
- Kendall, P. C., Chansky, T. E., Friedman, M., Kim, R., Kortlander, R., Sessa, F. M., et al. (1991). Treating anxiety disorders in children and adolescents. In P. C. Kendall (Ed.), *Child and adolescent therapy: Cognitive-behavioral procedures* (pp. 131-164). New York: Guilford Press.
- Kendall, P. C., Chansky, T. E., Kane, M. T., Kim, R. S., Kortlander, E. K., Ronan, K. R., et al. (1992). *Anxiety disorders in youth: Cognitive-behavioral interventions*. United States of America: Allyn and Bacon.
- Kendall, P. C., Flannery-Schroeder, E., Panichelli-Mindel, S. M., Southam-Gerow, M., Henin, A., & Warman, M. (1997). Therapy for youths with anxiety disorders: A second randomized clinical trial. *Journal of Consulting and Clinical Psychology*, 65, 366-380.
- Kendall, P. C., & Flannery-Schroeder, E. C. (1998). Methodological issues in treatment research for anxiety disorders in youth. *Journal of Abnormal Child Psychology*, 26, 27-38.
- Kendall, P. C., Flannery-Schroeder, E. C., & Ford, J. D. (1999). Therapy outcome research methods. In P. C. Kendall, J. N. Butcher & G. N. Holmbeck (Eds.), *Handbook of research methods in clinical psychology* (2nd ed., pp. 330-363). New York, USA: John Wiley & Sons, Inc.
- ✓ Kendall, P. C., & Gosch, E. A. (1994). Cognitive-Behavioural Interventions. In T. H. Ollendick, N. J. King & W. Yule (Eds.), *International Handbook of Phobic and Anxiety Disorders in Children and Adolescents* (pp. 415-438). New York: Plenum Press.
- Kendall, P. C., & Grove, W. M. (1988). Normative comparisons in therapy outcome. *Behavioural Assessment*, 10, 147-158.
- Kendall, P. C., & Hammen, C. (1995). *Abnormal psychology*. New York: Houghton Mifflin.
- Kendall, P. C., Kane, M. T., Howard, B. L., & Siqueland, L. (1990). *Cognitive-Behavioral Therapy for anxious children: Therapist manual*. Ardmore, PA: Workbook Publishing.
- Kendall, P. C., Kortlander, E., Chansky, T. E., & Brady, E. U. (1992). Comorbidity of anxiety and depression in youth: Treatment implications. *Journal of Consulting and Clinical Psychology*, 60, 869-880.
- Kendall, P. C., & Norton-Ford, J. D. (1982). *Clinical Psychology: Scientific and professional dimensions*. New York: John Wiley & Sons.
- Kendall, P. C., & Ronan, K. R. (1990). Assessment of children's anxieties, fears, and phobias: Cognitive-behavioral models and methods. In R. C. Reynolds & R. W.

Kamphaus (Eds.), *Handbook of psychological and educational assessment of children* (pp. 223-244). New York: Guilford Press.

- Kendall, P. C., & Southam-Gerow, M. A. (1996). Long-term follow-up of a cognitive-behavioral therapy for anxiety-disordered youth. *Journal of Consulting and Clinical Psychology, 64*, 724-730.
- King, N. J., & Tonge, B. J. (1992). Treatment of childhood anxiety disorders using behaviour therapy and pharmacotherapy. *Australian and New Zealand Journal of Psychiatry, 26*, 644-651.
- King, N. J. (1993). Simple and social phobias. *Advances in Clinical Child Psychology, 15*, 305-341.
- King, N. J., Hamilton, D. I., & Ollendick, T. H. (1988). *Children's phobias: A behavioural perspective*. England: John Wiley & Sons Ltd.
- King, N. J., Josephs, A., Gullone, E., Madden, C., & Ollendick, T. H. (1994). Assessing the fears of children with disability using the Revised Fear Survey Schedule for Children: A comparative study. *British Journal of Clinical Psychology, 67*, 377-386.
- King, N. J., & Ollendick, T. H. (1982). School refusal: Graduated and rapid behavioural treatment strategies. *Australian and New Zealand Journal of Psychiatry, 23*, 213-223.
- King, N. J., Ollier, K., Iacuone, R., Schuster, S., Bays, K., Gullone, E., et al. (1989). Fears of children and adolescents: A cross-sectional study using the Revised-Fear Survey for Schedule for Children. *Journal of Child Psychiatry and Psychology, 30*, 775-784.
- Kirisci, L., Clark, D. B., & Moss, H. B. (1996). Reliability and validity of the State-Trait Anxiety Inventory for Children in adolescent substance abusers: Confirmatory factor analysis and item response theory. *Journal of Child and Adolescent Substance Abuse, 5*, 57-69.
- Knight, R. G., Waal-Manning, H. J., & Spears, G. F. (1983). Some norms and reliability data for the State-Trait Anxiety Inventory and the Zung Self-Rating Depression scale. *British Journal of Clinical Psychology, 22*, 245-249.
- Kornhaber, R. C., & Schroeder, H. E. (1975). Importance of model similarity on extinction of avoidance behaviour in children. *Journal of Consulting and Clinical Psychology, 43*, 601-607.
- Koss, M. P., & Shiang, J. (1994). Research on brief therapy. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change* (4th ed., pp. 664-700). New York: John Wiley & Sons, Inc.
- Kovacs, M. (1978). The Interview Schedule for Children (ISC): Form C and the follow-up form. *Unpublished manuscript*.

- Kovacs, M. (1985). The Children's Depression Inventory. *Psychopharmacology Bulletin*, 21, 995-998.
- Kovacs, M. (1992). *Children's Depression Inventory manual*. New York: Multi-Health Systems, Inc.
- Last, C. G., Hansen, C., & Franco, N. (1998). Cognitive-behavioral treatment of school phobia. *Journal of the American Academy of Child & Adolescent Psychiatry*, 37, 404-411.
- Laurent, J. F., & Stark, K. D. (1993). Testing the cognitive content-specificity hypothesis with anxious and depressed youngsters. *Journal of Abnormal Psychology*, 102, 226-237.
- Lerner, J., Safren, S. A., Henin, A., Warman, M., Heimberg, R. G., & Kendall, P. C. (1999). Differentiating anxious and depressive self-statements in youth: Factor structure of the Negative Self-Statement Questionnaire among youth referred to an anxiety disorders clinic. *Journal of Clinical Child Psychology*, 28, 82-93.
- Lewinsohn, P. M., Gotlib, I. H., Lewinsohn, M., Seeley, J. R., & Allen, N. B. (1998). Gender differences in anxiety disorders and anxiety symptoms in adolescents. *Journal of Abnormal Psychology*, 107, 109-117.
- Lonigan, C. J., Carey, M. P., & Finch, A. J. (1994). Anxiety and depression in children and adolescents: Negative affectivity and the utility of self-reports. *Journal of Consulting and Clinical Psychology*, 62, 1000-1008.
- Lumpkin, P. W., Silverman, W., K, Weems, C. F., Markham, M. R., & Kurtines, W. M. (2002). Treating a heterogeneous set of anxiety disorders in youths with group cognitive behavioural therapy: A partially nonconcurrent multiple-baseline evaluation. *Behavior Therapy*, 33.
- Malcarne, V. L., & Ingram, R. E. (1994). Cognition and negative affectivity. In T. H. Ollendick & R. J. Prinz (Eds.), *Advances in Clinical Child Psychology* (Vol. 16, pp. 141-176). New York: Plenum Press.
- Martin, G., & Pear, J. (1992). *Behavior modification: What is it and how do we do it?* (4th ed.). New Jersey: Prentice Hall.
- Martin, M., Horder, P., & Jones, G. V. (1992). Integral bias in naming of phobia-related words. *Cognition and Emotion*, 6, 479-486.
- McAllister, W. R., & McAllister, D. E. (1995). Two-factor fear theory: Implications for understanding anxiety-based clinical phenomena. In W. O'Donohue & L. Krasner (Eds.), *Theories of Behavior Therapy: Exploring behavior change*. Washington, DC: American Psychological Association.
- McCathie, H., & Spence, S. H. (1991). What is the Revised Fear Survey Schedule for Children measuring? *Behaviour Research & Therapy*, 29, 495-502.

- McGee, R., Feehan, M., Williams, S., Partridge, F., Silva, P., & Kelly, J. (1990). DSM-III disorders in a large sample of adolescents. *Journal of Child and Adolescent Psychiatry, 29*, 611-619.
- McMurray, K., & Ronan, K. R. (2004). Childhood anxiety treatment: An integrated statistical review. *Manuscript in preparation*.
- Meichenbaum, D. (1971). Examination of model characteristics in reducing avoidance behavior. *Journal of Personality and Social Psychology, 17*, 298-307.
- Menzies, R. G., & Clarke, J. C. (1993). A comparison of in vivo and vicarious exposure in the treatment of childhood water phobia. *Behaviour Research & Therapy, 31*, 9-15.
- Merckelbach, H., de Jong, P. J., Muris, P., & van den Hout, M. A. (1996). The etiology of specific phobias: A review. *Clinical Psychology Review, 16*, 337-361.
- Miller, L. C., Barrett, C. L., & Hampe, E. (1974). Phobias of childhood in a prescientific era. In A. Davids (Ed.), *Child Personality and Psychopathology: Current topics* (Vol. 1, pp. 89-134). New York: John Wiley.
- Miller, L. C., Barrett, C. L., Hampe, E., & Noble, H. (1972). Comparison of reciprocal inhibition, psychotherapy, and waiting list control for phobic children. *Journal of Abnormal Psychology, 79*, 269-279.
- Morris, R. J., & Kratochwill, T. R. (1983). *Treating children's fears and phobias: A behavioral approach*. New York: Pergamon Press.
- Mowrer, O. (1960). *Learning theory and behaviour*. New York: Wiley.
- Mowrer, O. H. (1939). A stimulus-response analysis of anxiety and its role as a reinforcing agent. *Psychological Review, 46*, 553-565.
- Muris, P., Schmidt, H., Merckelbach, H., & Schouten, E. (2001). The structure of negative emotions in adolescents. *Journal of Abnormal Child Psychology, 29*, 331-337.
- Obler, M., & Terwilliger, R. F. (1970). Pilot study of the effectiveness of systematic desensitization with neurologically impaired children with phobic disorders. *Journal of Consulting and Clinical Psychology, 34*, 314-318.
- Ohman, A., & Soares, J., J. (1998). Emotional conditioning to masked stimuli: Exposure for aversive outcomes following nonrecognized fear-relevant stimuli. *Journal of Experimental Psychology: General, 127*, 69-82.
- Ollendick, T. H. (1979). Fear reduction techniques with children. *Progress in Behavior Modification, 8*, 127-168.

- Ollendick, T. H. (1983). Reliability and validity of the Revised Fear Survey Schedule for Children (FSSC-R). *Behavior Research and Therapy*, *21*, 685-692.
- Ollendick, T. H., & Hersen, M. (1993). Child and adolescent behavioral assessment. In T. H. Ollendick & M. Hersen (Eds.), *Handbook of Child and Adolescent Assessment* (pp. 3-14). United States of America: Allyn & Bacon.
- Ollendick, T. H., & King, N. J. (1991). Origins of childhood fears: An evaluation of Rachman's theory of fear acquisition. *Behaviour Research and Therapy*, *29*, 117-123.
- Ollendick, T. H., & King, N. J. (1994). Diagnosis, assessment, and treatment of internalizing problems in children: The role of longitudinal data. *Journal of Consulting and Clinical Psychology*, *62*, 918-927.
- Ollendick, T. H., & King, N. J. (1998). Empirically supported treatments for children with phobic and anxiety disorders: Current status. *Journal of Consulting and Child Psychology*, *27*, 156-167.
- Ollendick, T. H., King, N. J., & Frary, R. B. (1989). Fears in children and adolescents: Reliability and generalizability across gender, age, and nationality. *Behaviour Research and Therapy*, *23*, 465-467.
- Ollendick, T. H., Matson, J. L., & Helsel, W. J. (1985). Fears in children and adolescents: Normative data. *Behavior Research and Therapy*, *23*, 465-467.
- Öst, L., Svensson, L., Hellstrom, K., & Lindwall, R. (2001). One-session treatment of specific phobias in youths: A randomized clinical trial. *Journal of Consulting and Clinical Psychology*, *69*, 814-824.
- Paget, K. D., & Reynolds, C. R. (1984). Dimensions, levels and reliabilities on the Revised Children's Manifest Anxiety Scale with learning disabled children. *Journal of learning disabilities*, *17*, 137-141.
- Pallack, M. H., Otto, M. W., Sabatino, S., & Majcher, D. (1996). Relationship of childhood anxiety to adult panic disorder: Correlates and influence on course. *American Journal of Psychiatry*, *153*, 376-381.
- Papay, J. P., & Spielberger, C. D. (1986). Assessment of anxiety and achievement in kindergarten and first- and second-grade children. *Journal of Abnormal Child Psychology*, *14*, 279-286.
- Patchett-Anderson, L., & Ronan, K. R. (2004). Assessment and treatment in New Zealand: A survey of clinical psychologists. *Manuscript in preparation*.
- Puig-Antich, J., Orvaschel, H., Tabrizi, R. N., & Chambers, W. J. (1978). *Schedule for affective disorders and schizophrenia for school-age children (K-SADS)*. New York: New York State Psychiatric Institute.

- Rachman, R. (1977). The conditioning theory of fear-acquisition: A critical examination. *Behaviour Research and Therapy*, 15, 275-387.
- Rachman, S. (1991). Neo-Conditioning and the classical theory of fear acquisition. *Clinical Psychology Review*, 11, 155-173.
- Rapee, R. M. (1997). Potential role of childrearing practices in the development of anxiety and depression. *Clinical Psychology Review*, 17, 47-67.
- Rapee, R. M., & Barrett, D. H. (1993). Generalized anxiety disorder, panic disorder and the phobias. In P. B. Sutker & H. E. Adams (Eds.), *Comprehensive handbook of psychopathology* (2 ed.). New York: Plenum.
- Rapee, R. M., Barrett, P. M., Dadds, M. R., & Evans, L. (1994). Reliability of the DSM-III-R childhood anxiety disorders using structured interview: Interrater and parent-child agreement. *Journal of the American Academy of Child and Adolescent Psychiatry*, 33, 984-992.
- Reynolds, C. R. (1980). Concurrent validity of What I Think and Feel: The Revised Children's Manifest Anxiety Scale. *Journal of Consulting and Clinical Psychology*, 48, 774-775.
- Reynolds, C. R. (1982). Convergent and divergent validity of the Revised Children's Manifest Anxiety Scale. *Educational and Psychological Measurement*, 42, 1205-1212.
- Reynolds, C. R. (1985). Multitrait validation of the revised children's manifest anxiety scale for children of high intelligence. *Psychological Reports*, 56, 402.
- Reynolds, C. R., & Paget, K. D. (1981). Factor analysis of the Revised Children's Manifest Anxiety Scale for blacks, whites, males, and females with a national normative sample. *Journal of Consulting and Clinical Psychology*, 49, 352-359.
- Reynolds, C. R., & Paget, K. D. (1983). National normative and reliability data for the Revised Children's Manifest Anxiety Scale. *School of Psychology Review*, 12, 324-336.
- Reynolds, C. R., & Richmond, B. O. (1978). What I think and feel: A revised measure of the Children's Manifest Anxiety Scale. *Journal of Abnormal Child Psychology*, 6, 271-280.
- Reynolds, C. R., & Richmond, B. O. (1985). *Revised Children's Manifest Anxiety Scale (RCMAS): Manual*. Los Angeles: Western Psychological Services.
- Reynolds, R. C. (1981). Long-term stability of scores on the Revised-Children's Manifest Anxiety Scale. *Perceptual and Motor Skills*, 53, 702.
- Ronan, K. R. (1996). Building a reasonable bridge in childhood anxiety assessment: A practitioner's resource guide. *Cognitive and Behavioral Practice*, 3, 63-90.

- Ronan, K. R., & Deane, F. P. (1998). Anxiety disorders. In P. Graham (Ed.), *Cognitive behaviour therapy for children and families: Cambridge monograph series in child and adolescent psychiatry* (pp. 74-94). New York, USA: Cambridge University Press.
- Ronan, K. R., & Kendall, P. C. (1997). Self-talk in distressed youth: States-of-mind and content specificity. *Journal of Clinical Child Psychology, 26*, 330-337.
- Ronan, K. R., Kendall, P. C., & Rowe, M. (1994). Negative affectivity in children: Development and validation of a self-statement questionnaire. *Cognitive Therapy and Research, 18*, 509-528.
- Ronan, R. R. (1997). The effects of a "benign" disaster: Symptoms of post-traumatic stress in children following a series of volcanic eruptions. *The Australian Journal of Disaster and Trauma Studies, 1*, 1-9.
- Saylor, C. F., Finch, A. J., Spirito, A., & Bennett, B. (1984). The Children's Depression Inventory: A systematic evaluation of psychometric properties. *Journal of Consulting and Clinical Psychology, 52*, 955-967.
- Scherer, M. W., & Nakamura, C. Y. (1968). Fear Survey Schedule for Children (FSSC): A factor analytical comparison with manifest anxiety (CMAS). *Behaviour Research and Therapy, 6*, 173-182.
- Schniering, C. A., Hudson, J. L., & Rapee, R. M. (2000). Issues in the diagnosis and assessment of anxiety disorders in children and adolescents. *Clinical Psychology Review, 20*, 453-478.
- Schwartz, R. M. (1993). The idea of balance and integrative psychotherapy. *Journal of Psychotherapy Integration, 3*, 159-181.
- Schwartz, R. M., & Garamoni, G. L. (1986). A Structural model of Positive and Negative States of Mind: Asymmetry in the internal dialogue. In P. C. Kendall (Ed.), *Advances in cognitive-behavioral research and therapy* (Vol. 5, pp. 1-62). New York: Academic Press.
- Schwartz, R. M., & Garamoni, G. L. (1989). Cognitive balance and psychopathology: Evaluation of an information processing model of positive and negative states of mind. *Clinical Psychology Review, 9*, 271-294.
- Seligman, M. E. P. (1971). Phobias and preparedness. *Behavior Therapy, 2*, 307-320.
- Shortt, A. L., Barrett, P. M., & Fox, T. L. (2001). Evaluating the FRIENDS Program: A cognitive-behavioral group treatment for anxious children and their parents. *Journal of Clinical Child Psychology, 30*, 525-535.
- Silverman, W. (1987). *Anxiety Disorders Interview for Children (ADIC)*. State University of New York at Albany: Graywind Publications.

- Silverman, W. K. (1994). Structured Diagnostic Interviews. In T. H. Ollendick, N. J. King & W. Yule (Eds.), *International handbook of phobic and anxiety disorders in children and adolescents* (pp. 293-315). New York: Plenum Press.
- Silverman, W. K., & Eisen, A. R. (1992). Age differences in the reliability of parent and child reports of child anxious symptomatology using a structured interview. *Journal of the American Academy of Child and Adolescent Psychiatry, 31*, 117-124.
- Silverman, W. K., Ginsburg, G. S., & Kurtines, W. M. (1995). Clinical issues in treating children with anxiety and phobic disorders. *Cognitive and Behavioral Practice, 2*, 93-117.
- Silverman, W. K., Kurtines, W. M., Ginsburg, G. S., Weems, C. F., Lumpkin, P. W., & Carmichael, D. H. (1999). Treating anxiety disorders in children with group cognitive-behavioral therapy: A randomized clinical trial. *Journal of Consulting and Clinical Psychology, 67*, 995-1003.
- Silverman, W. K., Kurtines, W. M., Weems, C. F., Ginsburg, G. S., Rabian, B., & Serafini, L. T. (1999). Contingency management, self-control, and education support in the treatment of childhood phobic disorders: A randomized clinical trial. *Journal of Consulting and Clinical Psychology, 67*, 675-687.
- Silverman, W. K., & Nelles, W. B. (1988). The Anxiety Disorder Interview Schedule for Children. *Journal of the American Academy of Child and Adolescent Psychiatry, 27*, 772-778.
- Siqueland, L., Kendall, P. C., & Steinberg, L. (1996). Anxiety in children: Perceived family environments and observed family interaction. *Journal of Clinical Child Psychology, 25*, 225-237.
- Sitarenios, G., & Kovacs, M. (1999). Use of Children's Depression Inventory. In M. E. Maruish (Ed.), *The use of psychological testing for treatment planning and outcomes assessment* (2nd ed., pp. 267-298). London: Lawrence Erlbaum Associates.
- Skinner, B. F. (1938). *The behavior of organisms*. New York: Appleton-Century-Crofts.
- Southam-Gerow, M. A., Henin, A., Chu, B., Marrs, A., & Kendall, P. C. (1997). Cognitive-behavioral therapy with children and adolescents. *Child and Adolescent Psychiatric Clinics of North America, 6*, 111-136.
- Spence, S. H. (1997). Structure of anxiety symptoms among children: A confirmatory factor-analytic study. *Journal of Abnormal Psychology, 106*, 280-297.
- Spence, S. H., Rapee, R., McDonald, C., & Ingram, M. (2001). The structure of anxiety symptoms among preschoolers. *Behaviour Research and Therapy, 39*, 1293-1316.

- Spielberger, C., Gorsuch, R., & Lushene, R. (1970). *Test manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Spielberger, C. D. (1973). *State-Trait Anxiety Inventory for Children: Preliminary manual*. Palo Alto, CA: Consulting and Psychologists Press.
- Spielberger, C. D. (1983). *State-Trait Anxiety Inventory for Adults: Manual, test, scoring key*. Palo Alto: CA: Mind Garden.
- Spielberger, C. D., Edwards, C. D., Lushene, R. E., Montuori, J., & Platzek, D. (1973). *State-Trait Anxiety Inventory for Children*. Redwood City, CA: Mind Garden.
- Spielberger, C. D., Vagg, P. R., Barker, L. R., Donham, G. W., & Westberry, L. G. (1980). The factor structure of the State-Trait Anxiety Inventory. In S. I. & C. D. Spielberger (Eds.), *Stress and Anxiety* (Vol. 7, pp. 95-109). Washington, DC: Hemisphere Publishing Corporation.
- Strauss, C. (1987a). *Modification of the trait portion of the State-Trait Anxiety Inventory for Children--Parent form*. (Available from the author, Department of Psychology, University of Florida, Gainesville, FL 32606).
- Strauss, C. C. (1987b). *Modification of the trait portion of the State-Trait Anxiety Inventory for Children-Parent form*. Available from the author. Pittsburg, PA: Western Psychiatric Institute and Clinic.
- Strauss, C. C. (1993). Anxiety disorders. In T. H. Ollendick & M. Hersen (Eds.), *Handbook of Child and Adolescent Assessment* (pp. 239-250). United States of America: Allyn and Bacon.
- Strauss, C. C., Lease, C. A., Last, C. G., & Francis, G. (1988). Overanxious disorder: An examination of developmental differences. *Journal of Abnormal Child Psychology*, 16, 433-443.
- Tellegen, A. (1985). Structure of mood and personality and their relevance to assessing anxiety, with an emphasis on self-report. In A. H. Tuma & J. D. Maser (Eds.), *Anxiety and the Anxiety Disorders* (pp. 681-706). Hillsdale, NJ: Erlbaum.
- Treadwell, K. R., Flannery-Schroeder, E. C., & Kendall, P. C. (1995). Ethnicity and gender in relation to adaptive functioning, diagnostic status, and treatment outcome in children from an anxiety clinic. *Journal of Anxiety Disorders*, 9, 373-384.
- Treadwell, K. R. H., & Kendall, P. C. (1996). Self-talk in youth with anxiety disorders: States of mind, content specificity, and treatment outcome. *Journal of Consulting and Clinical Psychology*, 64, 941-950.
- Ultee, C. A., Griffioen, D., & Schellekens, J. (1982). The reduction of anxiety in children: A comparison of the effects of "systematic desensitization *in vitro*" and "systematic desensitization *in vivo*". *Behaviour Research and Therapy*, 20, 61-67.

- Vasey, M. W. (1993). Development and cognition in childhood anxiety. In T. H. Ollendick & R. J. Prinz (Eds.), *Advances in Clinical Psychology* (Vol. 15, pp. 1-39). New York: Plenum Press.
- Vasey, M. W., & Dadds, M. R. (Eds.). (2001). *The Developmental Psychopathology of Anxiety*. Oxford: Oxford University Press.
- Vasey, M. W., Daleiden, E. L., Williams, L. L., & Brown, L. M. (1995). Biased attention in childhood anxiety disorders: A preliminary study. *Journal of Abnormal Child Psychology*, *23*, 267-279.
- Vasey, M. W., El-Hag, N., & Daleiden, E. L. (1996). Anxiety and the processing of emotionally threatening stimuli: Distinctive patterns of selective attention among high- and low-test-anxious children. *Child Development*, *67*, 1173-1185.
- Vogel, J. M., & Vernberg, E. M. (1993). Part 1: Children's psychological responses to disasters. *Journal of Clinical Child Psychology*, *22*, 464-484.
- Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin*, *96*, 465-490.
- Watson, D., Clark, L. A., & Carey, G. (1988). Positive and negative affectivity and their relation to anxiety and depressive disorders. *Journal of Abnormal Psychology*, *97*, 346-353.
- Watson, D., Clark, L. E., Weber, K., Assenheimer, J. S., Strauss, M. E., & McCormick, R. A. (1995). Testing a tripartite model: I. Evaluating the convergent and discriminant validity of anxiety and depression symptom scales. *Journal of Abnormal Psychology*, *104*, 3-14.
- Watson, J. B., & Rayner, R. (1920). Conditioned emotional reactions. *Journal of Experimental Psychology*, *3*, 1-14.
- Weiss, B., & Weisz, J. R. (1995). Relative effectiveness of behavioral versus nonbehavioral child psychotherapy. *Journal of Consulting and Clinical Psychology*, *63*, 317-320.
- Weisz, J. R., Thurber, C. A., Sweeney, L., Proffitt, V. D., & LeGagnoux, G. L. (1997). Brief treatment of mild-to-moderate child depression using primary and secondary control enhancing training. *Journal of Consulting and Clinical Psychology*, *65*, 703-707.
- Weisz, J. R., & Weersing, V. R. (1999). Developmental outcome research. In W. K. Silverman & T. H. Ollendick (Eds.), *Developmental issues in the clinical treatment of children* (pp. 457-469). Needham Heights, MA: Allyn and Bacon.
- Weisz, J. R., & Weiss, B. (1989). Assessing the effect of clinic-based psychotherapy with children and adolescents. *Journal of Consulting and Clinical Psychology*, *57*, 741-746.

- Weisz, J. R., Weiss, B., Alicke, M. D., & Klotz, M. L. (1987). Effectiveness of psychotherapy with children and adolescents: A meta-analysis for clinicians. *Journal of Consulting and Clinical Psychology, 55*, 542-549.
- Weisz, J. R., Weiss, B., Han, S. S., Granger, D. A., & Morton, T. (1995). Effects of psychotherapy with children and adolescents revisited: A meta-analysis of treatment outcome studies. *Psychological Bulletin, 117*, 450-468.
- Wisniewski, J. J., Mulick, J. A., Genshaft, J. L., & Coury, D. L. (1987). Test-retest reliability of the Revised Children's Manifest Anxiety Scale. *Perceptual and Motor Skills, 65*, 67-70.
- World Health Organization. (1996). *Multi-Axial Classification of Child and Adolescent Psychiatric Disorders: ICD-10 classification of mental and behavioural disorders in children and adolescents*. Cambridge: Cambridge University Press.
- Yule, W. (1993). Developmental considerations in child assessment. In T. H. Ollendick & M. Hersen (Eds.), *Handbook of Child and Adolescent Assessment* (pp. 15-25). United States of America: Allyn & Bacon.
- Zinbarg, R. E., & Barlow, D. H. (1996). Structure of anxiety and the anxiety disorders: A hierarchical model. *Journal of Abnormal Psychology, 105*, 181-193.

APPENDIX A

SPECIFIC ANXIETY DISORDERS

Obsessive-compulsive Disorder (OCD) is defined by persistent reoccurring thoughts, images, or impulses (obsessions), and/or repetitious acts that the child feels must be carried out (compulsions). For a clinical diagnosis to be made, the symptoms need to occur for more than one hour per day and significantly interfere with the child's normal routine. Typical obsessions and compulsions are similar to those experienced by adults. For example, obsessions tend to revolve around contamination, harm of loved ones, and religious themes. Compulsions often involve checking, repeating, ordering and cognitively-based rituals. Regardless of age, OCD can be one of the more intractable anxiety disorders, chronic and fluctuating in nature (Albano, Knox, & Barlow, 1995).

Posttraumatic Stress Disorder (PTSD): a diagnosis of PTSD requires exposure to an extreme stressor involving actual or threatened death or serious injury to the self or to a significant other, accompanied by a response of extreme fear and helplessness which may be manifested by children in the form of agitated or disorganized behaviours. It also requires that the individual suffer from (a) distressful re-experiencing of the traumatic event(s), (b) avoidance of related stimuli or numbing of responsiveness, and (c) increased physiological arousal. The symptoms must occur for a minimum of one month, and may be delayed in onset (American Psychological Association, 2000).

Acute Stress Disorder (ASD) is a disorder that was new to DSM-IV (American Psychological Association, 1994). Symptoms for diagnosis are much the same as for PTSD. However, for ASD to be diagnosed, symptoms need to occur within four weeks of the event, last for at least two days and to exist for a maximum of one month only. If they occur for more than a month, a diagnosis of PTSD would be considered (American Psychological Association, 2000).

Panic Disorder (PD): despite some controversy about existence in prepubescent children (Nelles & Barlow, 1988), PD is a disorder that can be applied to children. Diagnosis requires recurrent and unexpected panic attacks plus one month of either concern about implications of the attack, persistent worry about possible future attacks or a significant

change in behaviour associated with the attack (American Psychiatric Association, 1994).

APPENDIX B
META-ANALYSIS OF MANUALISED CBT FOR ANXIOUS YOUTH

Running Head: CBT FOR YOUTH WITH ANXIETY DISORDERS

Efficacy of Cognitive-Behavioural Treatments for Youth with Anxiety Disorders: A
Power and Meta-Analytic Review

Caryl A. Huzziff, Kevin R. Ronan & Nikolaos Kazantzis
Massey University, New Zealand

This study is supported in part by a Massey University Research Fund grant. The authors would like to thank Craig J. Whittington for his assistance.

Correspondence concerning this article should be sent to Caryl A. Huzziff or Kevin R. Ronan, School of Psychology, Massey University, Private Bag 11222, Palmerston North 5301, New Zealand. E-mail may be sent to K.R.Ronan@massey.ac.nz.

(To be submitted)

Abstract

This review examined (a) the statistical power of studies of manualised cognitive behavioural therapy (CBT) for youth with anxiety disorders, and (b) the magnitude of CBT in comparison to wait-list control conditions. Results indicated (a) adequate statistical power and (b) a weighted mean effect size (d) of 1.21. Moderator analyses (chosen on a priori grounds) were also conducted by partitioning the sample of effect size estimations according to stage in therapy and types of outcome measures used. Tentative findings here indicated similar effect sizes for psychoeducational and exposure based components. Follow-up effect sizes, while lower, nevertheless indicated continuing improvement. The overall ability of any one treatment outcome measure to detect treatment effects was not significantly different to that produced by others.

Keywords: CHILD PSYCHOTHERAPY, META-ANALYSIS, POWER ANALYSIS, COGNITIVE-BEHAVIOURAL THERAPY

Efficacy of Cognitive-Behavioural Treatments for Youth with Anxiety Disorders: A Power and Meta-Analytic Review

Multiple studies using cognitive behavioural therapy (CBT) for anxious youth (Kendall et al., 1992) have established positive treatment outcomes (e.g., Kendall, 1994; Kendall et al., 1997; Barrett, Dadds, & Rapee, 1996). This body of research has found significant reductions in the number of participants meeting diagnostic criteria along with significant long-term changes on a number of child and parent indices (e.g., Kendall & Southam-Gerow, 1996). However, while the manualised CBT has been found to be efficacious across studies and by researchers in the United States (Kendall et al., 1992) and Australia (Barrett et al., 1996), the actual magnitude of treatment effects is not yet known. Given that this manualised protocol has established efficacy (e.g., Kazdin & Weisz, 1998), a meta-analysis of existing research is needed to quantify what effect manualised CBT has once various artefacts are controlled for including sampling and measurement error.

Two critical factors not considered in qualitative reviews (e.g., Kazdin & Weisz, 1998) are the reliance on significance testing and a failure to consider statistical power. An essential precondition to the establishment of treatment efficacy concerns the issue of investigation sensitivity (Lipsey, 1990). The question here is whether the studies were sufficiently powerful enough to detect meaningful treatment effects. When statistical power is low, the likelihood of obtaining a null result is high, and the interpretation of obtained results is decidedly problematic (Cohen, 1962, 1988). In addition, the establishment of the level of power in a given area of research is a useful end in itself (Cohen, 1988).

Prior reviews of statistical power in clinical research indicate considerable variability in ability to detect small and medium effect sizes (ESs). Kazdin and Weisz's (1998) review of previous youth therapy outcome related meta-analyses reported medium to large ESs for treatment outcome, comparable with adult literature. However, other reviews of statistical power in clinical research have repeatedly demonstrated that power has been generally weak to detect differences equivalent to small and medium ESs. The levels obtained vary and are often considerably lower than the recommended level of power of 0.80¹ (e.g., Cohen, 1962; Kazantzis, 2000; Kazdin & Bass, 1989; Rossi, 1990). Given the potential problem of low statistical power in outcome research and the need to document the level of power in this area, a power

analysis was initially conducted. A quantitative methodology was chosen as it is accepted as more accurate than estimates offered by qualitative narrative reviews (Cook & Leviton, 1980; Glass, McGaw, & Smith, 1981; Lipsey & Wilson, 1993).

While documenting power was an aim, the overall goal of the present study was to examine overall efficacy of manualised CBT for youth with anxiety disorders. Therefore, it was important to examine CBT effects when compared with wait-list controls and when assessed with different measures of symptom severity. The theoretical rationale underlying the use of CBT suggests that a core component of treatment, exposure, moderates the extent to which gains are maintained beyond the end of treatment (Kendall et al., 1992). In the second half of CBT for anxious youth, a shift from a cognitive and skills learning focus to an exposure-based focus occurs (Huzziff & Ronan, 1999; Kendall et al., 1992; Ronan & Deane, 1998). Therefore, in addition to an overall effect size, it was theoretically important to examine the efficacy of CBT between pre-treatment and midtreatment, midtreatment and posttreatment, as well as from posttreatment to follow-up with different measures of outcome.

Method

Potential studies were identified through searches using a computer search of PsycLit database 1887 through 1999, reference lists, and the contacting of colleagues to request reports of unpublished or in press data. To be included in the review, each study had to identify the treatment approach as CBT for anxiety disordered youth. Additionally, studies were required to report test statistics associated with hypothesis tests of the efficacy of CBT reflecting outcomes compared to wait-list control conditions for the power analysis, and means and standard deviations for the meta-analysis. Data based on general non-manualised CBT techniques or CBT nested in broader based approaches were not included. Six published studies conducted between 1989 and 2000 met these inclusion criteria. The independent variable in these studies was CBT, and the dependent measures of CBT were clinician, client, or other ratings of symptomatic improvement. Data were coded for the following moderators: efficacy at various stages of therapy; and type of outcome measure.

Six studies representing a sample of 276 participants were included in the review. The first step in conducting the review was to calculate statistical power for all studies. Statistical power was only calculated for major tests that assessed the interaction between treatment condition (CBT, wait-list control) and assessment period (pre, posttreatment). Statistical power was calculated based on samples sizes, Cohen's

(1988) power tables and ES conventions², together with a computer programme designed to calculate statistical power (Erdfelder, Faul, & Buchner, 1996). Statistical power was calculated separately for small, medium, and large ESs (Gillett, 1994), and alpha was set at .05 for all power estimations.

The second step in conducting the review was to calculate ESs for all studies. All main ESs are reported in terms of the weighted average \underline{d} . Within-group ESs were computed from formulas for calculating \underline{d} drawn from Hunter and Schmidt (1990), using means and standard deviations since they represent the most direct data available. Between group ESs were calculated within Hunter and Schmidt's computer programme³ incorporating the correction for unreliability in dependent measures (i.e., attenuation). Each study contributed more than one ES to the meta-analysis since multiple outcome measures were employed to examine CBT effects, and both posttreatment and follow-up assessments were conducted. A weighted average formula, without Fisher's z transformation, was used to combine multiple ESs for each study. In computing the combined ES for each study, the smallest sample size associated with tests within each study was used as this represented the most conservative approach. The method of weighted average \underline{d} was used to cumulate ESs across studies. This method is recommended by Hunter and Schmidt to give greater weight to those studies that have larger sample sizes since larger samples more adequately sample the population (i.e., larger samples have less sampling error variance). This weighted mean method also corrected for small sample bias in estimating ES (Hedges & Olkin, 1985).

The present study followed Hunter and Schmidt's (1990) procedures to correct the observed variance of the mean ES for sampling error in order to produce an estimate of the population variance. Observed and corrected ES variances are included in meta-analyses tables. The present study also included 95% confidence intervals (CIs) for all ESs, where CIs that do not contain zero can be considered statistically significant from zero at the $p < .05$ level. All meta-analytic variables were significant using this confidence interval significance testing procedure (Hunter, Schmidt, & Jackson, 1982; Schmidt, 1996). The use of CIs in interpreting ES estimations is increasing among meta-analytic reviewers (see Kazantzis, Deane, & Ronan, 2000; Whittington & Podd, 2000; Zakzanis, 1998).

The final step in conducting the review was to partition the data into subsets according to the two moderators: stage of therapy, and type of outcome measure. This enabled the examination of the relative effects of CBT at mid, posttreatment, and

follow-up, as well as the effects of CBT using different dependent measures. This procedure involved forming subsets of effect sizes according to the two moderators, and performing sub-analyses (or mini meta-analyses) on each subset. More detailed information regarding the general statistical procedures used in moderator meta-analysis is provided by Hunter and Schmidt (1990). The n s reported represent the number of studies reported in each analysis.

Results

Statistical Power

Table 1 shows the power of hypothesis tests for individual studies examining CBT interventions for youth with anxiety disorders. Based on 35 hypothesis tests of improvement from pre to posttreatment, the average statistical power to detect small effects was .17 ($Mdn = .17$, $SD = .06$). This means that, on average, investigators had a 17% chance of detecting or reproducing effects of small magnitude. However, power to detect medium effects was .75 ($Mdn = .79$, $SD = .21$), and power to detect large effects was .95 ($Mdn = .99$, $SD = .07$). Researchers had a 75% and 95% chance of detecting treatment effects of medium and large magnitude, respectively. Because the degree of design sensitivity was close to the 80% criterion for medium effects, and exceeded the criterion for large effects, the findings supported the assertion that studies in the review benefited from adequate statistical power.

General Treatment Effects

Table 2 shows the mean ES for individual studies examining CBT interventions for youth with anxiety disorders. The overall weighted mean effect of all studies was $d = 1.21$ ($n = 6$). The obtained effect was highly reliable. The lower bound limit of the 95% CI was $d = .53$, which is well above zero. This effect of CBT differed from the change observed over time in the wait-list control group. The improvement among controls from pre to post assessment was substantially less, $d = .35$ (95% CI = .35 to .35, $n = 4$). It should be noted that the improvement calculated for wait-list groups was based on data from only four studies ($N = 184$) as two studies did not use control groups (Howard & Kendall, 1996; Kane & Kendall, 1989). Nevertheless, an overall weighted average ES may not reflect a single parameter, it is important to consider the variance in the ES estimate. While the mean treatment effect of CBT differed significantly from zero, and differed from the small change in the wait-list control group, it produced a wide CI (95% CI .53 to 1.88) where only 27% of the observed variance was accounted for by sampling error. Because the level (i.e., 73%) explained by treatment is lower

than the recommended level, 75% (Schmidt, 1996), partitioning of data to examine CBT effects as assessed by different dependent measures, and CBT effects at different times during treatment is warranted (i.e., moderator analysis). By comparison, the 95% CI for the wait-list ES indicates that 100% of the observed variance in the estimate was accounted for by sampling error, confirming the notion that slight improvement over time was the single parameter at work for those in the wait-list control condition.

Comparative Efficacy at Different Treatment Intervals

The overall mean treatment effect that emerged from pre to midtreatment was $d = .58$ (95% CI = .58 to .58, $n = 2$). The treatment effect for the mid- to posttreatment interval was similar in magnitude $d = .51$ (95% CI = -.01 to 1.02, $n = 2$). However, these findings should be interpreted with caution since the 95% CI for mid to posttreatment included zero and only two studies contributed to the analyses. Treatment effects were smaller from posttreatment to 12-month follow-up $d = .26$ (95% CI = .26 to .26, $n = 3$), but still within the range of the effect size for the mid- to post-treatment interval. All studies produced positive mean ESs indicating the maintenance of treatment gains.

Outcome Measures

The comparative treatment effects obtained with different outcome measures, at each stage of therapy, are shown in Table 3. An examination of ESs produced during the pre to posttreatment interval (see Figure 1) showed that the strongest treatment effect was obtained with the Child Behaviour Checklist (CBCL: Achenbach, 1991), where $d = 1.92$ (95% CI = 0.99 to 2.86, $n = 6$). It is notable that the CBCL also produced the largest ES during the pre to midtreatment, mid to posttreatment, and during the post to follow-up stages in therapy. The findings for the superiority of the CBCL during the pre to midtreatment and mid to posttreatment stages should be interpreted with some caution, however, as only two measures were used in the analyses. A treatment effect similar to that obtained with the CBCL was produced with the other parent-rated measure, the State-Trait Anxiety Inventory for Children – Modification of Trait Version for Parents (STAIC-A-Trait – P: Strauss, 1987) during the pre-posttreatment interval ($d = 1.80$, 95% CI 0.05 to 3.55, $n = 4$). Nonetheless, treatment effects obtained with child self-report and the CBCL teacher report form were not significantly different, as demonstrated by the large 95% CI where d s ranged from 0.52 to 1.42 in Table 3. Taken together, these findings support, in particular, the utility

of both parent and child self-report measures in assessing the efficacy of CBT for youth with anxiety disorders.

Discussion

Manualised CBT outcome research for anxious children was examined across an 11-year period (1989-2000) to establish the level of power these studies have for detecting differences and to establish overall ESs. In total, six studies with 276 participants met criteria for inclusion in this study. Results indicated adequate statistical power for the manualised CBT with anxious youth. Using criteria recommended by Cohen (1988) for small, medium and large ESs (.20, .50 and .80 respectively), researchers had a 75% and 95% chance of detecting treatment effects of medium and large magnitude, respectively. The ability to detect small ESs was poor, only 17%. The results of the present study support previous reviews of childhood treatment research which have indicated treatment research has sufficient power to detect medium to large ESs (e.g., Kazdin & Weisz, 1998; Weisz, Weiss, Han, Granger, & Morton, 1995).

ESs for all studies were calculated for posttreatment and follow-up assessments in addition to stage of therapy (mid, posttreatment and follow-up) and type of outcome measure. Taken together results indicate manualised CBT is effective, providing quantifiable support for assertions made in Kazdin and Weisz's (1998) qualitative review. Waitlist control groups had an ES reflecting slight improvement of anxiety over time. In comparison, treatment groups revealed an overall large impact of treatment outcome on anxious youth ($d = 1.21$). In this comparison only 27% of the treatment outcome could be attributed to sampling bias leaving the remaining 73% effect better explained by treatment itself. Of the studies that enabled the investigation of treatment gains across similar follow-up periods continuing improvement ($d = .26$) was noted across 12 months. All studies thus indicated a continuation of treatment gains at follow-up.

Given that 73% of treatment outcome may be best explained by treatment, and the two halves of treatment differ in focus (psycho-educational versus exposure), these 'halves' were compared. Overall, when considered individually, the first and second halves of treatment accounted for about the same amount of treatment outcome ($d = .58$ and $.51$ respectively). These results should be considered with caution however as results were obtained from two studies only and were variable as mid to posttreatment CI's included zero.

Additionally, the comparative treatment effect of different treatment outcome measures at each stage of therapy support the use of multiple report measures to assess CBT efficacy in anxious youth. While the strongest ES was obtained with parent measures, the overall ability to measure treatment effects was not significantly different to that produced by other measures.

Several implications can be drawn from the present review. Concerning the role of the psychoeducational component of treatment, suggestions have been made that beneficial treatment outcome may be unrelated to this component. In support of this concept, previous meta-analytic reviews of CBT have indicated that changes in cognitive processing, a target area of psychoeducation, do not significantly relate to behaviour adjustment (Durlak, Fuhrman & Lampman, 1991). The current results from multiple mid and posttreatment measures, while tentative, indicate that perhaps in the case of manualised CBT for anxious children that psychoeducational and performance based components play equally important roles in relation to therapeutic improvement. Second, due to a limitation in current available data in the area only tentative light has been able to be shed on the role of the two halves of treatment. Results do however indicate much more robustly that treatment outcome is due to treatment and are not the result of effects over time.

There are a number of limitations of the present study. First, the number of studies reviewed was limited resulting in tentative conclusions regarding the relative efficacy of two treatment halves. However, while the number of studies was limited, the overall sample size of 276 youth was adequate to assess an overall ES. Second, the efficacy of CBT in controlled research settings established in this study may be different from that which has yet to be established in clinical practice. There is the assertion that the use of CBT interventions in clinical practice differs from that recommended in the literature. It has also been suggested that manualised treatment may bridge at least some of the gap between research and clinical practise (e.g., Kendall & Southam-Gerow, 1995; Kendall & Flannery-Schroeder, 1998). Further research is required to assess this issue.

The current study found that the manualised CBT protocol for anxious youth best accounted for treatment outcome when compared with no treatment. Results also tentatively indicate that both main components/halves of treatment (cognitive and exposure) effect similar treatment outcome. More research is required into the role of

the different phases of treatment. Additionally, evaluation of CBT for anxious youth in a more strictly clinical setting is warranted.

Footnotes

1. Although power ≥ 0.80 is used in the present study as recommended by Cohen (1988), others have suggested a higher level (.90, .95) of power as the accepted criterion (e.g., Freiman, Chalmers, Smith, & Kuebler, 1978; Friedman, Furberg, & DeMets, 1985).

2. Cohen's (1988) conventions for ES are $d = .20$ for small effects, $d = .50$ for medium effects, and $d = .80$ for effects of large magnitude.

3. The code for Hunter and Schmidt's (1990) computer programme used to produce d values corrected for attenuation can be found in their Appendix (pp. 553-555). Unreliability information was obtained from the technical manuals for the dependent measures. Because this information was unavailable for two measures (i.e., State-Trait Anxiety Inventory for Children – Modification of Trait Version for Parents; Coping Questionnaire – Child), the arithmetic mean of available reliability coefficients was used.

References

References marked with an asterisk were included in the review.

Achenbach, T. M. (1991). Manual for the Child Behavior Checklist/4-18 and 1991 Profile. Burlington, VT: University of Vermont Department of Psychiatry.

*Barrett, P. M., Dadds, M. R., & Rapee, R. M. (1996). Family treatment of childhood anxiety: A controlled trial. Journal of Consulting and Clinical Psychology, *64*(2), 333-342.

Cohen, J. (1962). The statistical power of abnormal-social psychological research: A review. Journal of Abnormal and Social Psychology, *65*, 145-153.

Cohen, J. (1988). Statistical power analysis for the behavioural sciences (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.

Cook, T. D., & Leviton, L. C. (1980). Reviewing the literature: A comparison of traditional methods with meta-analysis. Journal of Personality, *48*, 449-472.

Durlak, J. A., Fuhrman, T., & Lampman, C. (1991). Effectiveness of cognitive-behavior therapy for maladaptive children: A meta-analysis. Psychological Bulletin, *110*, 204-214.

Erdfelder, E., Faul, F., & Buchner, A. (1996). GPOWER: A general power analysis program. Behavior Research Methods, Instruments, & Computers, *28*, 1-11.

*Flannery-Schroeder, E. C., & Kendall, P. C. (2000). Group and individual cognitive-behavioral treatment for youth with anxiety disorders: A randomized clinical trial. Cognitive Therapy and Research, *24*(3), 251-278.

Freiman, J. A., Chalmers, T. C., Smith, H., & Kuebler, R. R. (1978). The importance of beta, the Type II error, and sample size in the design and interpretation of the randomized control trial. New England Journal of Medicine, *299*, 690-694.

Friedman, L. M., Furberg, C. D., & DeMets, D. L. (1985). Fundamentals of clinical trials (2nd ed.), Littleton, MA: PSG Publications.

Gillett, R. (1994). Post hoc power analysis. Journal of Applied Psychology, *5*, 783-785.

Glass, G. V., McGaw, B., & Smith, M. L. (1981). Meta-analysis in social research. Beverly Hills, CA: Sage.

Hedges, L. V., & Olkin, I. (1985). Statistical methods for meta-analysis. Orlando, FL: Academic.

*Howard, B. L., & Kendall, P. C. (1996). Cognitive-behavioral family therapy for anxiety-disordered children: A multiple-baseline evaluation. Cognitive Therapy and Research, *20*(5), 423-443.

Hunter, J. E., & Schmidt, F. L. (1990). Methods of meta-analysis: Correcting error and bias in research findings. Newbury Park, CA: Sage.

Hunter, J. E., Schmidt, F. L., & Jackson, G. B. (1982). Meta-analysis: Cumulating research findings across studies. Beverly Hills, CA: Sage.

Huzziff, C. A., & Ronan, K. R. (1999). Working with anxious and comorbid disorders of childhood and adolescents. In H. V. Bilsen (Ed.), Focusing the Mind. Wellington: Central Institute of Technology.

*Kane, M. T., & Kendall, P. C. (1989). Anxiety disorders in children: A multiple-baseline evaluation of a Cognitive-Behavioral treatment. Behavior Therapy, *20*, 499-508.

Kazantzis, N. (2000). Power to detect homework effects in psychotherapy outcome research. Journal of Consulting and Clinical Psychology, *68*, 166-170.

Kazantzis, N., Deane, F. P., & Ronan, K. R. (2000). Homework assignments in cognitive and behavioral therapy: A meta-analysis. Clinical Psychology: Science and Practice, *7*, 189-202.

Kazdin, A. E., & Bass, D. (1989). Power to detect differences between alternative treatments in comparative psychotherapy outcome research. Journal of Consulting and Clinical Psychology, *57*, 138-147.

Kazdin, A. E., & Weisz, J. R. (1998). Identifying and developing empirically supported child and adolescent treatments. Journal of Consulting and Clinical Psychology, *66*(1), 19-36.

*Kendall, P. C. (1994). Treating anxiety disorders in children: Results of a randomized clinical trial. Journal of Consulting and Clinical Psychology, *62*(1), 100-110.

Kendall, P. C., Chansky, T. E., Kane, M. T., Kim, R. S., Kortlander, E. K., Ronan, K. R., Sessa, F. M., & Siqueland, L. (1992). Anxiety disorders in youth: Cognitive-behavioral interventions. United States of America: Allyn and Bacon.

Kendall, P. C., & Flannery-Schroeder, E. C. (1998). Methodological issues in treatment research for anxiety disorders in youth. Journal of Abnormal Child Psychology, *26*(1), 27-38.

*Kendall, P. C., Flannery-Schroeder, E., Panichelli-Mindel, S. M., Southam-Gerow, M., Henin, A., & Warman, M. (1997). Therapy for youths with anxiety disorders: A second randomized clinical trial. Journal of Consulting and Clinical Psychology, *65*(3), 366-380.

Kendall, P. C., & Southam-Gerow, M. A. (1996). Long-term follow-up of a cognitive-behavioral therapy for anxiety-disordered youth. Journal of Consulting and Clinical Psychology, *64*(4), 724-730.

Lipsey, M. W. (1990). Design sensitivity: Statistical power for experimental research. Newbury Park, CA: Sage.

Lipsey, M., & Wilson, D. (1993). The efficacy of psychological, educational, and behavioral treatment: Confirmation from meta-analysis. American Psychologist, *48*, 1181-1209.

Ronan, K. R., & Deane, F. P. (1998). Anxiety disorders. In P. Graham (Ed.), Cognitive behaviour therapy for children and families: Cambridge monograph series in child and adolescent psychiatry. Cambridge University Press: Cambridge.

Rossi, J. S. (1990). Statistical power of psychological research: What have we gained in 20 years? Journal of Consulting and Clinical psychology, *58*, 646-656.

Schmidt, F. L. (1996). Statistical significance testing and cumulative knowledge in psychology, Implications for training of researchers. Psychological Methods, *1*, 115-129.

Strauss, C. (1987). Modification of the trait portion of the State-Trait Anxiety Inventory for Children--parent form: (Available from the author, Department of Psychology, University of Florida, Gainesville, FL 32606).

Weisz, J. R., Weiss, B., Han, S. S., Granger, D. A., & Morton, T. (1995). Effects of psychotherapy with children and adolescents revisited: A meta-analysis of treatment outcome studies. Psychological Bulletin, *117*(3), 450-468.

Whittington, C. J., Podd, J., & Kan, M. M. (2000). Recognition memory impairment in parkinson's disease: Power and meta-analyses. Neuropsychology, *14*, 233-246.

Zakzanis, K. K. (1998). Brain is related to behavior ($p < .05$). Journal of Clinical and Experimental Neuropsychology, *20*, 419-427.

Table 1

Studies Included in the Power-Analysis and Power of Individual Studies

	<u>n_i</u>	Effect Size		
		Small	Medium	Large
Barrett et al. (1996)	79	18.00	87.00	100.00
Flannery-Schroeder & Kendall (2000)	34	10.00	46.89	84.33
Kendall (1994)	45	15.38	71.38	97.13
Kendall et al. (1997)	84	25.07	93.50	100.00
<u>M</u>	60.43	0.17	0.75	0.95
<u>Mdn</u>	61.75	0.17	0.79	0.99
<u>SD</u>	25.07	0.06	0.21	0.07
CI	0.36-0.85	0.11-0.23	0.54-0.95	0.88-1.00

Note. n_i = number of participants in test of interaction effects. CI = 95% CI of power estimate.

Table 2

Studies Included in the Meta-Analysis and Effect Sizes (d) of Individual Studies

Study	n	d	CI	CBCL	CDI	CQ-C	NASSQ	RCMAS	STAIC	FU
Barrett et al. (1996)	28	0.96	0.60-1.32	1	1	0	0	1	0	1
Flannery-Schroeder & Kendall (2000)	13	1.49	0.76-2.22	1&2	1	1	0	1	1	0
Howard & Kendall (1996)	6	2.23	0.32-4.14	1&2	1	1	0	1	1	0
Kane & Kendall (1989)	4	2.79	-1.25-6.83	1&2	0	0	0	0	1	0
Kendall (1994)	27	1.34	0.91-1.77	1&2	1	1	1	1	1	1
Kendall et al. (1997)	60	0.99	0.76-1.22	1&2	1	1	1	1	1	1

Note. n = total number of participants. CI = 95% CI of ES; CBCL = Child Behaviour Checklist (0 = not used; 1 = parent rated; 2 = teacher rated); CDI = Child Depression Inventory (0 = not used; 1 = used); CQ-C = Coping Questionnaire – Child (0 = not used; 1 = used); NASSQ = Children’s Negative Affectivity Self-Statement Questionnaire (0 = not used; 1 = used); RCMAS = Revised Children’s Manifest Anxiety Scale (0 = not used; 1 = used); STAIC = State-Trait Anxiety Inventory for Children (0 = not used; 1 = A-Trait scale; 2 = A-State scale; 3 = A-Trait – P version for parents); FU = conducted 12 month follow-up (0 = no; 1 = yes).

Table 3
Mean Effect Sizes (M_d) for Moderator Meta-Analysis

Moderator variable	n_d	N_{obs}	M_d	95% CI	S_d^2	S_{res}^2
Pre – Midtreatment						
CBCL	2	132	0.64	0.64-0.64	0.01	0.00
CDI	2	132	0.57	0.57-0.57	0.01	0.00
Mid – Posttreatment						
CBCL	2	132	0.98	0.38-1.57	0.13	0.09
CDI	2	132	0.37	0.37-0.37	0.00	0.00
Pre – Posttreatment						
CBCL	6	276	1.92	0.99-2.86	0.33	0.23
CBCL – TRF	4	208	0.67	0.67-0.67	0.00	0.00
CDI	5	268	0.86	0.86-0.86	0.01	0.00
CQ-C	3	200	1.42	1.00-1.84	0.07	0.05
NASSQ	2	174	0.52	0.20-0.85	0.04	0.03
RCMAS	4	256	1.19	0.67-1.71	0.09	0.07
STAIC (A-Trait – P)	4	100	1.80	0.05-3.55	0.97	0.80
STAIC (A-Trait)	4	212	1.30	0.37-2.22	0.25	0.22
STAIC (A-State)	3	200	1.07	0.63-1.50	0.07	0.05
Posttreatment – Follow-up						
CBCL	3	266	0.35	0.18-0.52	0.08	0.01
CBCL – TRF	2	210	0.20	0.20-0.20	0.03	0.00
CDI	3	266	0.17	0.12-0.21	0.07	0.01
CQ-C	2	210	0.10	0.10-0.10	0.00	0.00
NASSQ	2	210	0.19	0.19-0.19	0.00	0.00
RCMAS	3	266	0.30	0.07-0.53	0.07	0.01
STAIC (A-Trait)	2	210	0.13	0.13-0.13	0.01	0.00
STAIC (A-State)	2	210	-0.17	-0.17--0.17	0.01	0.00

Note. n_d = number of ESs within each sub-category; N_{obs} = total number of observations; CI = 95%

CI of ES; S_d^2 = observed variance in ESs; S_{res}^2 = residual variance in ESs (S_d^2 corrected for sampling error). CBCL = Child Behaviour Checklist. CDI = Child Depression Inventory. CBCL – TRF = Teacher record form for CBCL. CQ-C = Coping Questionnaire – Child. NASSQ = Children’s Negative Affectivity Self-Statement Questionnaire. RCMAS = Revised Children’s Manifest Anxiety Scale. STAIC = State-Trait Anxiety Inventory for Children that produces enduring tendencies to experience anxiety (A-Trait) and temporal and situational variations in perceived anxiety (A-State). STAIC (A-Trait – P) = State-Trait Anxiety Inventory for Children – Modification of trait version for parents.

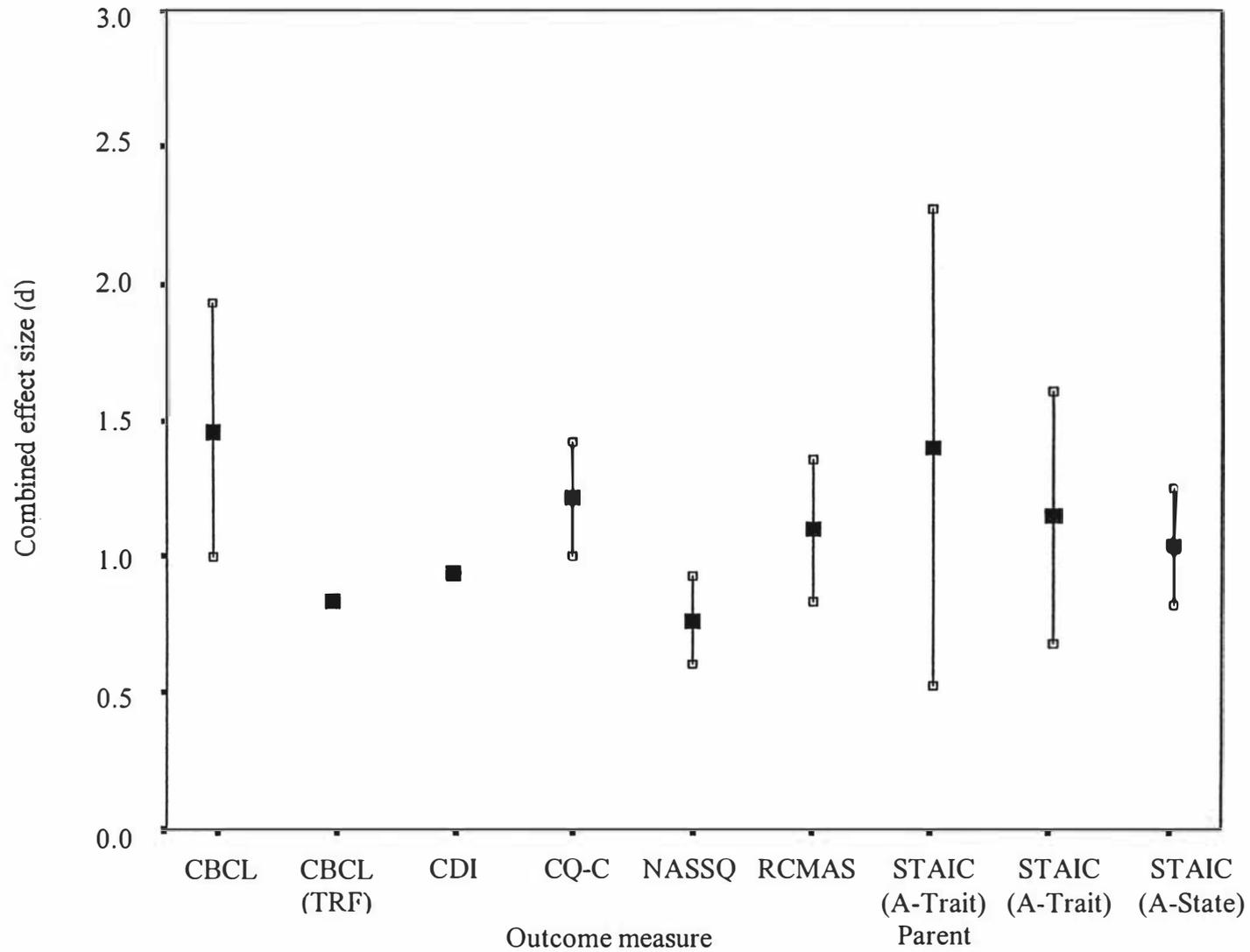


Figure 1. Combined effect sizes for outcome measures with upper and lower bound limits of 95% confidence intervals for the pre to posttreatment interval.

APPENDIX C

PARTICIPANT SUMMARY

CBT Participants

Participant 02

Eve, a 12-year old European girl, was referred for treatment because of excessive generalised worry. Additional concerns included separation and social anxiety. Eve's anxiety made it difficult for her to stay overnight away from home and precluded her from attending school camps. Eve has experienced learning difficulties in spelling, reading, and math. Her peers are reported to tease her about her short stature.

According to her mother, this teasing has been upsetting for Eve. Over the past year, she missed approximately 10 days of school due to anxiety. Eve' mother reported that her daughter "worries about everything" and "is uptight" making it difficult for her to maintain friends. Somatic complaints included feeling dizzy, stomach aches, difficulty sleeping and tearfulness. Anxious situations targeted on the Coping Questionnaire and monitored during treatment included a) taking tests, b) being teased by other children, and c) being away from her mother.

Participant 03

Matt, a seven-year old European boy, was referred for treatment because of excessive generalised worry and specific phobias (particularly animals). Additional concerns included separation and social issues. Matt's range of anxiety concerns and related avoidance frequently made it difficult for him to attend school, visit with friends, or be active within daily family life. Anxiety regarding school had been an issue since kindergarten. Somatic complaints included difficulty getting to sleep at night, stomach-aches, feeling shaky, sweaty hands, and an inability to sit still. Matt's parents reported that their son was "high-strung" often experiencing sudden mood changes and displaying temper tantrums. Anxious situations targeted on the Coping Questionnaire and monitored during treatment included a) being away from his parents, b) feeling sick (stomach aches), and c) being around animals like dogs.

Participant 06

Hope, a 12-year old European-Maori girl, was referred for treatment because of excessive separation anxiety and post-traumatic stress. Of secondary concern was depression. The majority of Hope's anxiety was focused on concern for her family's wellbeing. As a result of these concerns Hope required constant reassurance (e.g., cuddles, kisses, etc) from her mother, and required her mother to lay with her each night prior to going to sleep. Post-traumatic stress related to the death of Hope's father and was seen to be a contributing factor to Hope's separation concerns. Somatic complaints included irritability, difficulty concentrating, inability to sit still/relax, sweating, and stomach-aches. Hope's mother reported that her daughter was currently living a restricted lifestyle where she would rather spend her time with her mother than friends. Anxious situations targeted on the Coping Questionnaire and monitored during treatment included a) worrying about her mother when she is not with her, b) worrying about being safe, and c) worrying about her mother becoming sick.

Participant 07

Joy, an 11-year old European girl, was referred for treatment because of generalised worry. Joy's major source of worry stemmed from concern regarding her schoolwork, in particular homework. Joy and her mother report that as a result of worry over homework Joy stays up as late as midnight working on tasks. Due to worry she often wakes early (e.g., 5.00 am) and is unable to go back to sleep. Somatic complaints included irritability, difficulty concentrating, sleeping, relaxing, headaches, and stomach-aches. Anxious situations targeted on the Coping Questionnaire and monitored during treatment included a) worrying about homework, b) worrying about small matters, and c) becoming angry or stressed with her younger sibling. The third item, while not strictly anxiety focused was included at the insistence of Joy's mother.

Participant 09

Sid, a seven-year old European boy, was referred for treatment because of excessive separation concerns. Additional concerns included generalised and specific anxiety. Sid's anxiety concerns were numerous markedly restricting both his and his family's lifestyle. Sid's separation anxiety precluded separation from his mother when at home. For example, Sid's mother reported that there were times when she was unable to go to

the toilet without Sid becoming distressed. Separation when attending school was not a concern as Sid's mother was also his teacher. General worries revolved around health (particularly his mothers) and finance. Somatic complaints included difficulty going to sleep, tiring easily, easily upset and irritable, and muscle aches in his legs or neck. Anxious situations targeted on the Coping Questionnaire and monitored during treatment included a) being in the dark when going to bed, b) being at home, in a room by himself, and c) worry about his or his parent's health.

Participant 12

Ron, a 12-year old European boy, was referred for treatment because of excessive separation anxiety and generalised worry. An additional concern included social anxiety. Separation and social concerns caused problems attending school and precluded Ron staying overnight at friend's homes or camp. General worries revolved around the future, health, and unwanted, re-occurring thoughts. Somatic complaints included trouble sleeping, nausea, headaches, tiring easily, easily upset or irritable, muscle aches, and difficulty concentrating. Anxious situations targeted on the Coping Questionnaire and monitored during treatment included a) staying overnight away from home, b) re-occurring thoughts, and c) being teased.

Behavioural Treatment Participants

Participant 01

Carl, a six-year old European boy, was referred for treatment because of excessive separation concerns causing problems attending school, and social concerns. Social issues were related to managing social interactions with peers and initiating conversations with others. These issues had been present since first attending school. Somatic complaints included feeling dizzy, problems getting to sleep at night, and feeling nauseous. Carl's mother reported that her son was "uptight" and "clingy", especially when required to attend school, and often had temper tantrums. Anxious situations targeted on the Coping Questionnaire and monitored during treatment included a) leaving parents to go to school, b) speaking to new or unfamiliar people, and c) working or playing with other children in school.

Participant 04

Cory, an 11-year old European-Maori boy, was referred for treatment because of excessive separation, social and generalised anxiety. Additional concerns included specific phobia, panic, and a previous diagnosis of ADD at age eight by his paediatrician. Cory's anxiety concerns were numerous and markedly restricted both his and his family's lifestyle. Social concerns related to peers and performance situations. Somatic complaints included difficulty going to sleep, sweating, increased heart beat, feeling dizzy, severe headache, nausea, and vomiting. According to Cory's parents, their son's paediatrician had found no physical cause for his headaches and nausea, but he had been prescribed, and was taking anti-nausea drugs (i.e., Metoclopramide). Cory's parents reported their son to be engaged in an avoidant and restricted lifestyle. Cory is reported to have had very little contact with friends outside of school and often did not attend school due to anxiety. Anxious situations targeted on the Coping Questionnaire and monitored during treatment included a) being away from mum and dad, b) speaking to new or unfamiliar people, and c) feeling sick (stomach aches, fast heartbeat, or dizzy).

Participant 05

Job, a nine-year old Maori boy, was referred for treatment because of excessive separation concerns. These caused problems attending school and staying overnight with significant others (e.g., grandparents and cousins) or at friend's homes. Job's parents report that anxiety regarding attending school has been an issue since kindergarten, and issues of separation anxiety have existed since Job was a toddler. Additional concerns included generalised anxiety (subclinical) regarding school, performance, interpersonal relationships and perfectionism. Job experiences learning difficulties in spelling, reading, and comprehension and frequently becomes distressed regarding these difficulties. Somatic complaints included often feeling tired, trouble paying attention, trouble sleeping at night, irritability, muscle aches, and stomach-aches. Anxious situations targeted on the Coping Questionnaire and monitored during treatment included a) being away from his parents, b) being in the dark, and c) worrying about his parent's when they are not with him.

Participant 08

Rose, a 10-year old European-Maori girl, was referred for treatment due to excessive separation anxiety. Additional concerns included generalised anxiety and social anxiety. Rose's separation anxiety made it difficult for her to be separated from her mother and sister, precluding Rose staying at friend's homes, and at times, significant other's homes (i.e., her fathers and grandmothers). Rose's generalised anxiety revolved around school, friends and her health. In the previous school year she was reported to have missed approximately one day every three to four weeks. Somatic complaints included irritability, difficulty concentrating, sleeping, relaxing, headaches, muscle aches, and stomach-aches. Anxious situations targeted on the Coping Questionnaire and monitored during treatment included a) worry about becoming sick or catching a disease, b) sleeping away from home, and c) repetitive, upsetting thoughts.

Participant 10

Bob, a 10-year old European boy, was referred for treatment because of excessive generalised anxiety. An additional concern was excessive social anxiety. Bob's general anxiety concerns revolved around his performance, and the health of himself and significant others. Social concerns also related to performance situations. Somatic complaints included restless sleep, tiring easily, easily upset and irritable, muscle aches in his neck, an inability to sit still or relax, and difficulty concentrating. Anxious situations targeted on the Coping Questionnaire and monitored during treatment included a) worry about performance, b) worry about the health of significant others, and c) talking with unfamiliar children.

Participant 11

Sam, a nine-year old European boy, was referred for treatment because of excessive generalised anxiety. Sam's primary worries revolved around school and academic performance. Additional concerns included worry regarding little things, family, self-doubts, exactness and a strong need for perfection. For example, excessive anxiety or distress was reported to occur for Sam if he was unable to arrive at school early, be chosen by the teacher as the 'best,' or if he believed he was not going to be able to get his homework completed. Sam's somatic complaints included difficulty going to sleep, difficulty relaxing, tiring easily, easily upset or irritable, and difficulty concentrating or

paying attention. Anxious situations targeted on the Coping Questionnaire and monitored during treatment included a) being unable to do his homework, b) being unable to play soccer, and c) worry that he has not 'done well' or 'good enough'.

APPENDIX D

INFORMATION SHEETS FOR PARENTS/GUARDIANS

(Massey Letterhead)

INFORMATION SHEET FOR PARENTS/GUARDIANS

What is this study about?

This study is about helping children cope with anxiety problems. Anxiety is a form of stress. It includes symptoms such as apprehension, heart palpitations, perspiration, headaches, tightness in the chest, mild stomachache, fear and avoidance of situations or things. This study aims to help children with anxiety by having them participate in a free 8-16 week treatment programme designed to help them more effectively manage and cope with anxiety. This programme has already been shown to work in other studies. What we want to find out is what parts of the treatment programme are most important so we can tailor treatment to help make it more useful for children and families in the future.

The project is being run by Caryl Huzziff as a Ph.D. research project and is supervised by Dr Kevin Ronan in the School of Psychology at Massey University.

The following two parts of this information sheet provide you with (a) a brief explanation of what you would need to do if you take part in the study, and (b) your rights if you decide to take part in the study.

What would you need to do?

If you agree to take part in this study, we would first need to assess your child to establish whether he/she has an anxiety disorder. This assessment is expected to take approximately 1½ hours and involves both the child and parent(s)/guardian(s). If your child has an anxiety problem and you wish to take part in the study, a time commitment on your behalf would be involved. Further assessments will need to be carried out during treatment, directly after treatment is completed and again 3, 6 and 12 months after treatment is completed. Each of these assessments is expected to take

approximately 1½ hours. After completion of initial assessments there will be a delay of 1-4 weeks before treatment is started. Treatment would involve your child coming to one 60-80 minutes session once a week for 8-16 weeks. This treatment is provided at no cost to you.

Assessment and treatment will be carried out at the Massey University Psychology Clinic. Assessment and treatment sessions will be audio- and or video recorded if prior consent is given.

If you decide to participate, you have the right to:

- Choose not to participate or withdraw at any stage and still receive treatment services.
- Refuse to answer any questions at any time and continue to receive treatment services.
- Ask any questions about the research and have them answered.
- Discuss any aspects of the study before agreeing to participate in the study.
- Decline to have assessment or treatment sessions audio- or video-recorded regardless of prior consent.
- Have access to a summary of the findings of the study when it is concluded.
- Know that all information is provided on the understanding that it is completely confidential to the researcher. All records are identified only by code number, are seen only by the researcher and supervisor, and are to be used only for the purposes of the research. It will not be possible to identify individuals in any reports of the results. If you withdraw from the study at any time but wish to continue with treatment, all information collected for treatment purposes after withdrawal will be excluded from the research.

If you are interested in taking part and would like me to contact you to answer any questions or to arrange a meeting, please phone **Caryl Huzziff** on 350 5196.

APPENDIX E
INFORMATION SHEET FOR CHILDREN

(Massey Letterhead)

INFORMATION SHEET FOR CHILDREN

Massey University is doing a study with children who have anxiety problems. Children who have anxiety problems may often feel nervous, feel their hearts beating very fast, get a tight chest, have stomachaches, and get scared of things or places.

What is the study about?

The study we are doing is trying to help children with anxiety by getting them to do a special programme. This programme teaches children things they can do to help cope with things like stomachache and feeling scared. The programme has worked for lots of other children with the same sort of problems.

The people running the programme are Caryl Huzziff and her supervisor Dr Kevin Ronan.

The next two parts of this information sheet tell you two things. One, what you would need to do if you do the programme, and two, the things you can ask and do if you decide to do the study.

What would you need to do?

If you choose to do the programme, we would need to see you to decide how to best help. This will mean us asking you and someone who looks after you some questions. Once you have done that, you may be able to start the programme. Doing the programme would mean you would come and see us for about an hour once a week for 12-20 meetings. After you have finished the programme we will want to see you three more times to see how you are doing.

Things you can ask or do in our study:

If you decide to do the study you can:

- Choose to stop doing the study at any time.
- Say you do not want to answer questions.
- Ask any questions about the study.
- Talk about any part of the study before you decide to do the study.
- Say you do not want us to recorded things, even if you said yes first.

We (the researchers) will not tell anyone anything you tell us, except the people helping us do the study.

APPENDIX F**PARENT/GUARDIAN CONSENT FORM**

I have read the information sheet and have had the details of the study explained to me. My questions about the study have been answered to my satisfaction, and I know that I can ask further questions at any time.

I also understand that I have the right to withdraw my child from the study at any time and the right to refuse to answer any particular questions in the study and continue to receive free treatment.

Parental consent is essential for children to participate within this study. In agreeing to participate, I also provide consent for my child's participation.

(Children aged eight years and younger do not need to sign a consent form if parental consent is given).

I agree to provide information to the researchers on the understanding that it is completely confidential and that my name and my child's name will not be used without my permission. (*The information will be used only for this research and publication arising from this research project*).

I agree/do not agree to the interview & treatment sessions being audio/video taped.

I also understand that I have the right to ask for the audio/video tape to be turned off at any time during the interview.

I agree to participate in this study under these conditions and those set out in the information sheet.

Signed:

Name:

Signed:

Name:

Date:

APPENDIX G
CHILD CONSENT FORM

I have read the information sheet for children and have had the study explained to me. My questions about the study have been answered, and I know that I can ask more questions at any time.

I know that I can stop taking part in the study at any time and can refuse to answer any questions.

I agree to give information to the researchers on the understanding that it is completely confidential, meaning that it is private.

I agree to the interview & treatment sessions being audio taped.....**Yes** **No**

I agree to the interview & treatment sessions being video taped.....**Yes** **No**

I also understand that I have the right to ask that the audio/video tape to be turned off at any time during the interview.

I agree to take part in this study under these conditions.

Signed:

Name:

Date:

APPENDIX H

OUTLINE OF *BT MANUAL* SESSION OBJECTIVES AND GOALS

Note, the following is not a direct extract from the *BT Manual* (Huzziff & Ronan, 2002). The information in this section has been adjusted to increase readability of information without the *Manual* and serves as a brief overview only.

The *BT* treatment manual describes an eight-session intervention programme for the treatment of anxiety disorders in children and young adolescents. The programme is a brief, behaviour-based package developed from Kendall et al.'s (1990) 16-session manualised cognitive-behavioural treatment (CBT) programme.

The *BT* programme includes a greater focus on behavioural techniques and more immediate practise with new skills than Kendall and colleagues (1990) CBT manual. General anxiety training strategies (e.g., relaxation training, exposure, and modelling) and protocols that have been adapted for children and early adolescents are used.

The behavioural techniques used address issues of behavioural avoidance that are believed to maintain anxiety. A coping model is used to encourage children to directly cope with their anxiety-provoking experiences to reduce stress rather than relying on existing avoidance behaviour. The primary treatment aim is to help children and young adolescents reduce their anxiety, producing changes in the anxious child's behaviour by helping the child to recognise signs of unwanted anxious arousal, using these signs as cues to use anxiety coping/management strategies (in the first instance, relaxation).

Anxiety management includes relaxation training strategies, identification of other actions that can help, and performance-based practice (exposure), both inside and outside of treatment sessions. Skills training and exposure are sequenced within the manual to progressively build skill proficiency.

Treatment strategies used in the programme include the following techniques:

- ◆ coping modelling
- ◆ identification and recognition of unwanted physical arousal when anxious
- ◆ relaxation procedures

- ◆ imagery
- ◆ role-plays/rehearsals
- ◆ graduated exposure to anxiety provoking situations (imaginal and *in vivo*)
- ◆ application and practice of skills in increasingly anxiety provoking situations
- ◆ homework assignments (Show That I Can tasks; STIC tasks)
- ◆ contingent rewards

Three major concepts are taught to the child within the first three sessions. The first concept involves the child developing an awareness of bodily reactions and feelings and their relationship to somatic arousal. The child is taught to recognise physical reactions specific to his or her body as cues that he or she is becoming anxious. The second concept focuses on behavioural problem solving strategies that can be used to help the child cope. The third concept relates to self-reinforcement for successful or partially successful coping.

The first three sessions focus on the recognition of physical responding to fear, relaxation skills, other actions that can help, self-reinforcement and exposure to low anxiety provoking imaginal and *in vivo* situations. A parent session, designed to encourage parental cooperation is scheduled between the therapist and the parent(s)/caregiver(s) either at the end of session 3 or between session 3 and 4. Sessions 4 to 7 focus on continued graduated exposure and practice with coping skills. Finally, session 8 focuses on closure of the therapeutic relationship and the videotaping of a “coping commercial” designed to inform or demonstrate to other children how to cope in anxious situations.

Homework tasks are referred to as “Show-That-I-Can” (STIC) tasks and are assigned outside of the therapy setting to reinforce the concepts and strategies taught during sessions. Before the close of each session the STIC tasks to be completed prior to the following session are discussed, and the activities recorded in the child’s workbook. The child is able to earn stickers or points for each completed STIC task and can exchange these for consumable rewards (e.g., books, games, sweets) during session 4 and social rewards (e.g., going for an ice-cream with the therapist, playing a video game) during session 8.

For each homework assignment, the therapist should establish exactly what the homework task is, when, where and how often it should be done, and how long it should take, allowing for input and choice from the child. Potential difficulties should be discussed and homework modified if necessary. The therapist should ensure a 70% or greater confidence rating by the child that he can do the homework. If a rating of less than 70% is acquired the therapist needs to work with the child and, where appropriate parent to alter various aspects of the homework until a 70% confidence rating (or higher) is obtained. The therapist then writes in the child's journal what the task is, when, where, how often, and how long the task is expected to take.

Each of the concepts and skills taught in sessions are introduced in a difficulty-graduated order. Throughout treatment the therapist serves as a coping model for all new skills introduced. Following therapist modelling the child is invited to participate in role-plays with the therapist using a "tag-a-long" procedure where the child follows along with the therapist practising the use of new skills. Finally, the child is encouraged to role-play the situation independently.

The treatment programme is individually based and exposure exercises should reflect this. Situations that are specific to the child should be gathered during assessment and during the first one to two sessions to allow the clinician to develop individually tailored exposure exercises. STIC tasks are flexible and are designed to enable the therapist to assign specific, individually tailored tasks for the child to complete between sessions.

Each session begins with general objectives, followed by specific goals and tasks to be covered. The manual is meant to be used as a flexible tool, and should serve as a guiding template for the application of the treatment skills and strategies. Application of the programme should be done in a manner that takes into account the individual requirements and concerns of each child. The following list is an outline of session contents:

- Session 1 Rapport development, treatment outline, and development of a fear hierarchy.
- Session 2 Review and build on fear hierarchy, identification of somatic responses to anxiety and relaxation skills as a form of coping response.
- Session 3 Review of somatic anxiety cues, continue relaxation training, the introduction of the idea of actions that can help, and imaginal and *in vivo* practice in low to moderate anxiety provoking situations.
- Parent Session Twenty-minute parent session to encourage parental cooperation and support of the child's management of anxious situations with the use of new skills.
- Session 4 Review of relaxation training and other actions that can help, and practice relaxing/coping in imaginal and *in vivo* moderate anxiety provoking conditions.
- Session 5 Briefly review relaxation training and actions that can help, and practice relaxing/coping *in vivo* moderate to high anxiety provoking conditions.
- Session 6 Practice of coping skills in imaginal and *in vivo* situations that produce moderate to high levels of anxiety, and introduction of the idea of making a video "coping commercial"
- Session 7 Continued practice of coping skills in situations that produce high levels of anxiety. Further develop the ideas for making a video commercial.
- Session 8 Review the treatment programme, create the "coping commercial" and begin closure to the therapeutic relationship.
- Session 9 Assessment Session: Complete post-treatment assessment, review the treatment programme and bring closure to the therapeutic relationship.

APPENDIX I

ADDITIONAL RESULTS

Table I.1. Child Self-Report Scores on the Fourth Question of the Coping Questionnaire (CQ-C): How much do you think this program will help you feel less upset?

Treatment condition	Participant	Assessment Points					
		Pre-treatment	Mid-treatment	Post-treatment	3-Month follow-up	6-Month follow-up	12-Month follow-up
CBT	(02) Eve	5	5	5	5	6	4
	(03) Matt	6	6	6	5	6	6
	(06) Hope	7	7	-	-	6	4
	(07) Joy	6	6	6	7	7	7
	(09) Sid	4	3	6	7	6	6
	(12) Ron	4	7	7	7	7	-
BT	(01) Carl	7		7	7	7	7
	(04) Cory	5		7	7	6	7
	(05) Job	2		5	4	4	3
	(08) Rose	5		5	5	4	4
	(10) Bob	4		7	7	7	7
	(11) Sam	3		6	6	6	6

Note: - = data incomplete or not obtained; the question was rephrased at post-assessment points to ask: How much do you think this program has helped you feel less upset?

Table I.2. Parent Reported Scores on the Fourth Question of the Coping Questionnaire (CQ-P): How much do you think this program has helped your child to feel less upset?

Treatment condition	Participant	Assessment Points			
		Post-treatment	3-Month follow-up	6-Month follow-up	12-Month follow-up
CBT	(02) Eve	5	5	6	6
	(03) Matt	5	6	3	5
	(06) Hope	7	-	7	7
	(07) Joy	4	5	4	4
	(09) Sid	6	6	6	6
	(12) Ron	6	6	6	-
BT	(01) Carl	5	4	5	5
	(04) Cory	6	7	6	6
	(05) Job	5	5	4	4
	(08) Rose	6	6	5	4
	(10) Bob	6	6	5	5
	(11) Sam	7	7	6	6

Note: - = data incomplete or not obtained.

Table I.3. Mean CBT and BT Child's Perception of Therapeutic Relationship (CPTR) scores following treatment

Treatment condition	Participant	Post-treatment (mean score)
CBT	(02) Eve	3.10
	(03) Matt	4.86
	(06) Hope	3.70
	(07) Joy	3.90
	(09) Sid	3.43
	(12) Ron	4.90
BT	(01) Carl	4.70
	(04) Cory	3.00
	(05) Job	4.30
	(08) Rose	3.43
	(10) Bob	3.29
	(11) Sam	3.60

Table I.4 CBT and BT Child and Parent Recall of Content Questionnaire (RCQ) responses to open-ended questions regarding treatment at post-treatment and 12-month follow-up

CBT Condition	Response	Post-treatment	12-Month Follow-up
<i>Child</i>			
Remember	Trading in points	✓	✓✓
	Video	✓✓	✓✓
	Talking	✓	
	Role-plays	✓✓✓	
Important	Helping one cope with fears	✓✓✓✓✓	✓✓
	Relaxation	✓✓✓	
	FEAR steps	✓✓	
Liked	Video	✓✓✓	✓✓✓
	Trading in points	✓✓✓✓	✓✓✓
	Time off school	✓	
Unimportant	(no unimportant factors reported)		
Disliked	Having to role-play anxious and disliked/scared situations	✓✓	✓
	Homework	✓	
<i>Parent</i>			
Remember	Therapist-parent relationship	✓✓✓	✓
	Return of child's confidence	✓✓✓✓✓	
	Confidential	✓✓	✓
	Child's ability to cope	✓	
Important	Focus on child	✓✓	✓
	Development of child's life-skills	✓✓✓✓	✓
	Support system for parents	✓✓✓	✓
	FEAR steps	✓✓	✓
	Therapist-child relationship	✓✓✓	
Liked	Focus on child	✓	
	Consistent approach	✓	
	Support system for parents	✓	
	Follow-up	✓	
	Therapist-child relationship	✓	
	Child's diary	✓	
Unimportant	Length of the programme	✓	✓
Disliked	Completing weekly forms	✓✓✓	✓

Table I.4. *Continued.*

BT Condition	Response	Post-treatment	12-Month Follow-up
<i>Child</i>			
Remembered	Trading in points	✓	✓
	Video	✓✓✓	✓✓
	Relaxation	✓✓✓✓✓	✓✓✓✓✓
	Talking with the therapist	✓	✓
Important	Learning to cope with fears	✓✓✓✓✓	✓✓✓✓✓
	Relaxation	✓✓✓	✓
Liked	Video	✓✓✓	✓
	Trading in points	✓✓✓✓	✓✓
	Ability "to do stuff I couldn't before"	✓	
	Role-plays	✓	
	Time off school	✓	
Unimportant	-		
Disliked	Having to role-play anxious and disliked/scared situations	✓	✓
	Homework	✓	
	Forms	✓✓	✓
<i>Parent</i>			
Remembered	Therapist-parent relationship	✓	✓
	Relaxation	✓✓✓	✓✓
	Insight into child's behaviour	✓✓✓✓✓	
Important	Focus on child	✓	
	Relaxation	✓✓✓	✓✓
	Coping strategies	✓✓✓✓✓	✓✓
	Development of child's life-skills	✓	
Liked	Support system for parents	✓✓	✓✓
	Parental ability to manage child's anxious Behaviour	✓✓	✓
	Child's ability to cope	✓✓✓	✓✓
	Therapist-child relationship	✓	✓
	Child's increased ability to self-monitor	✓✓	✓
Unimportant	Questionnaire forms	✓✓	✓
Disliked	Completing weekly forms	✓✓✓	✓